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Maritime Transport Strategy for Finland 2014–2022

Ministry of Transport and Communications

Vision

Well-being and competitiveness through high-quality transport and communications networks

Mission

The Finnish Ministry of Transport and Communications seeks to promote the well-being of our people and the competitiveness of our businesses. Our mission is also to ensure that people have access to well-functioning, safe and reasonably priced transport and communications networks.

Values

Courage

Equity

Cooperation

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Abstract

Finland's maritime strategy for 2014–2022 provides an overall view that serves Finland's economy, business life and employment and takes account of the new environmental norms. The strategy analyses the changes that have taken place in the past years and the future challenges. It also outlines a vision for 2030 and identifies measures that are required in meeting them. A key aim in the strategy is to ensure that Finland's maritime transport and maritime industries can operate effectively and that the competitiveness of the national economy and environmental and safety issues are taken extensively into account. A vision for 2030 is "A prosperous Finland – efficient sea routes". Its objective is to ensure that

- Finnish foreign trade and domestic waterborne transport are smoothly functioning and socio-economically viable and international competitiveness is ensured also in winter. In order to ensure Finland's national competitiveness fairway dues should not burden maritime transport any more than at present.
- Finland will be a forerunner in winter and environmental technology and will export high competence in those fields. The operations of Finnish ship owners are vital and competitive.
- The maritime transport and maritime cluster have the skills and know-how to meet their future needs, and the visibility and attractiveness of the sector will increase.
- The Baltic Sea is safe and healthy and it attracts recreational activities and tourism to the area and provides high-quality maritime services for the use of the market area.
- Finnish maritime transport sector will become the leading service provider of the Baltic Sea countries in terms of sustainable logistic concepts.

The maritime transport vision, strategic priorities, critical success factors and measures for 2014–2022 that are all included in the strategy have been defined together with the maritime sector and operators in this field.

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Preface

Finland is a maritime nation. About 90% of its exports and 80% of its imports are carried by sea. International cargoes totalled 96.3 million tonnes in 2013.¹ The high proportion of foreign trade transported by sea makes it essential that sea routes are well-functioning, reliable, safe and environmentally friendly. Good maritime connections are vital for the competitiveness of Finland's businesses and its economy and for Finnish society in general. Finland is very dependent on shipping for its national prosperity and wellbeing.

The wellbeing of the Finnish economy will be increasingly dependent on international trade. The country's location on the northern fringes of Europe, the long distances to Europe's main markets and the difficult winter conditions all place Finland in a special position in relation to many other EU countries. Finland and Estonia are the only countries in the world whose ports all freeze over in normal winters. Due to Finland's geography and number of inhabitants, its traffic flows are very thin and distances long, which adds to logistics costs. The annual logistics costs of Finnish companies together exceed EUR 34 billion, which averages about 14% of turnover.² This is high by international standards. Maritime transport costs have an indirect impact on the viability of operations not only in the transport sector but also countless other sectors.

The Maritime Transport Strategy for Finland takes account of the changes occurring in the operating environment of the maritime transport sector, at both the international and national level. Factors affecting shipping needs include globalisation, the growing focus on Asia, and the global economic recession. Other challenges for the maritime transport sector include climate change, emissions from ships, the growing need for energy and the rise in fuel prices. The changes already under way in industrial and business structures will also have a decisive impact on the future development of the sector. New standards on vessel emissions and the future pricing of a tonne of carbon dioxide (CO₂) will also affect shipping costs.

The sulphur regulations for shipping that come into force in 2015 for the Baltic Sea and the North Sea represent a major challenge in the short term, especially for the export industry, as they will lead to a rise in transport costs and possibly also changes in the routing of certain traffic flows. As well as looking for ways to adapt to the new requirements, we must also be aware of the opportunities in new, clean technologies and alternative fuels. Finland has a dynamic maritime cluster and outstanding technological expertise.

The maritime transport sector is very international, and new regulations are constantly being decided or under preparation at both the International Maritime Organization (IMO) and the EU, especially on safety and environmental matters. Finland must be active and proactive in the international arena and must ensure that its views – determined in collaboration with the different parties in the sector – are taken into account in the decision-making. All the parties concerned must resolutely communicate Finland's jointly determined views to the wider world and ensure that Finland plays a key role in influencing decisions. The aims of the Maritime Transport Strategy for Finland include drawing attention strongly to the importance of sea transport to the Finnish economy and improving the image of shipping as an energy-efficient mode of transport.

The Government Programme of Prime Minister Katainen's Government, published in 2011, states that securing the prerequisites for maritime transport is of vital importance as Finland's foreign trade is highly dependent on transport by sea. The Government Pro-

¹ Monthly statistics on international shipping. December 2013. p. 4. Finnish Transport Agency.

² Finland state of logistics 2012. Publications of the Ministry of Transport and Communications 11/2012. p. 20. Table 2. (In Finnish)

gramme also emphasises the need to reduce emissions from maritime transport and to promote development of the market for clean technologies and access to that market. The Programme also states that the Government will take an active role in international negotiations to ensure that environmental requirements on maritime transport do not generate unreasonable costs for Finnish companies or lead to an unequal competitive situation within the EU and in relation to non-EU operators.

The preparation of the Maritime Transport Strategy for Finland began in summer 2012. The Ministry of Transport and Communications set up a working group to prepare a comprehensive maritime transport strategy that serves Finland's economy, businesses and employment and takes account of new environmental standards, and which analyses the changes that have taken place in previous years and the challenges ahead and sets out policy outlines for the future. The key goal assigned to the working group was to create a strategy to ensure that Finland's maritime transport and maritime industries can operate effectively and that the competitiveness of the national economy and environmental and safety issues are taken extensively into account. The working group was composed of representatives from the ministries and from the government agencies within the transport administration (Appendix 2).

The preparation of the Maritime Transport Strategy for Finland was divided into the following key areas: 1) transportation by sea, security of supply and the competitiveness of Finnish businesses; 2) training, expertise and employment in the maritime transport sector; 3) fairways, transport chains and winter navigation; 4) port policy; 5) environmental issues in the maritime transport sector; 6) maritime transport subsidies and fees; 7) vessel traffic management, maritime safety and rescue services; and 8) EU and international cooperation in maritime transport.

The need to reform the fairway dues system was examined by a separate working group, which submitted its proposals in August 2013. In carrying out its brief, the working group also looked at the fairway dues and other similar shipping fees applied in Sweden, Norway, Estonia, Latvia, Lithuania and Russia.³

The Maritime Transport Strategy for Finland was prepared in close cooperation between the various stakeholders and the different administrative branches of Government. During this time, three major consultation events were held, along with six seminars on different themes and four workshops on the vision and required action. In addition, different parties were involved in strategy preparation through participation in small groups based on different themes. A large number of participants from the sector took part in these events. The aim of this extensive preparation work was to get all the relevant parties and the different sectors meaningfully involved in formulating the strategy.

The Maritime Transport Strategy for Finland was prepared in accordance with the new Finnish transport policy principles and aims, which are based on the idea that transport services should be provided as efficiently as possible, to match identified needs and within the framework of the resources available in each case. The new transport policy aims to achieve growth and wellbeing for society at large. Important key themes are customer-orientation, transport system service level, diversity of measures, responsible use of shared resources, and transparent interaction and cooperation with different parties. Under the new transport policy, the transport administration functions as a facilitator. In line with the principles referred to above, the Maritime Transport Strategy for Finland seeks to improve the competitiveness and efficiency of maritime transport and to enhance the appeal and image of the maritime transport sector.

³ Preparing for a reform of fairway dues: Background report. Publications of the Ministry of Transport and Communications 23/2013. (In Finnish)

Maritime transport movements link up to other parts of the transport system, and so the system should be examined as an integrated whole. Within the Government's transport administration a number of other strategy formulation processes have been under way too, determining policies for the future of the country's transport system. These include a strategy for air transport and a comprehensive review of transport pricing, taxes and charges. A development overview of the regional structure and transport system is also being prepared under the direction of the Ministry of the Environment.

In collaboration with the maritime transport sector and users of the sector's services, the Maritime Transport Strategy for Finland has identified the most effective means for securing Finland's maritime connections in the future in a way that is cost-effective, safe and environmentally friendly. The strategy examines maritime transport as both a sector serving the needs of businesses in general and as a business sector in its own right that can offer Finland new kinds of growth opportunities. The drafting of the strategy has also taken into account the special characteristics of the Åland Islands, which particularly emphasise strong, broad-based maritime expertise and shipping company operations.

As part of the preparatory work for the Maritime Transport Strategy, the maritime and maritime transport strategies of Denmark, France, the Netherlands, Norway, and Sweden and the Port's policy of Germany were also examined.⁴

A programme of action was drafted for the Maritime Transport Strategy for Finland, which includes specific proposals for action to be taken in 2014–2015 and 2016–2022. The programme identifies the parties that would be responsible for each of the measures and the estimated cost implications for central government finances (Appendix 1⁵). The parties involved in the preparation of the strategy are committed to furthering the implementation of the action. A maritime transport sector cooperation forum will be set up to monitor progress in implementing the specified measures.

⁴ An extensive examination of other countries' strategies was made in connection with preparation of the Maritime Transport Strategy for Finland, and a summary of this is available upon request from the Ministry of Transport and Communications.

⁵ In Finnish

1. Vision 2030: A prosperous Finland with efficient sea routes

The key goal of the Maritime Transport Strategy for Finland is to ensure that maritime transport and the country's maritime industries can operate effectively and that the competitiveness of the national economy and environmental and safety issues are taken extensively into account.

The strategy sets out a vision for maritime transport in 2030, which was determined in collaboration with the maritime transport sector and with users of the sector's services. A prosperous Finland with efficient sea routes describes the target state for maritime transport in 2030, when Finland, its businesses and citizens will be prospering and the country will be competitive on world markets. Baltic Sea shipping will be safe and environmentally friendly, and risks minimised, especially in regard to oil spill accidents.



Figure 1: Finland's maritime transport sector: vision, strategic priorities, critical success factors and action themes to 2030.

Vision 2030

Finland and its businesses and citizens are prospering in 2030, and the country is competitive on world markets. Baltic Sea shipping is safe and environmentally friendly, and risks are minimised, especially in regard to oil spill accidents.

Finland's success is supported by smart and efficient sea routes. Industry is served by secure transport chains with a minimum of inconvenience caused by winter conditions, and its transport costs are reasonable. Maritime transport has retained its position as an environmentally friendly, energy-efficient and cost-efficient transport mode.

Finnish shipping company operations are profitable and have a strong market position in the Baltic Sea area, and the companies are well placed to operate in competition alongside foreign operators. The profitability of shipping company operations is based on good customer relationships created through high-quality and competitive services.

Finland has a robust and well-networked maritime cluster that relies especially on products and services which use green and clean technologies and on special ice and weather expertise, for which there is a growing demand due to the surge of interest in the world's northern sea areas.

Finnish maritime expertise is of a high standard and innovative. This expertise is also exported. Young people have confidence in the maritime transport sector, and occupations within the sector are considered good career options that open up opportunities for career development in positions at sea and on land.

The Baltic Sea is a safe, clean and attractive sea. Opportunities for Finland and the Baltic Sea in areas such as recreation and tourism are well used and awareness of these increased.

The factors critical for success in achieving the vision:

Cooperation and trust are paramount elements for developing efficient maritime connections. This requires information exchange between all parties, as well as trust and new forms of cooperation.	Winner's attitude describes an approach by which all parties come together and resolve today's challenges and those of tomorrow. The approach includes anticipating change, adjusting to change and ultimately making good use of new circumstances. It also covers the courage to react quickly to changing circumstances.
Forward-looking oversight of interests, vigorously exerting influence and international partnership will all allow Finland's views to be conveyed promptly to international forums.	Enabling governance will build a successful and motivating operating environment for new approaches and innovations. The governance system will facilitate, open new doors, advance partnerships and operate actively in international and EU arenas.

Table 1. Factors critical for success in achieving the vision for Finland's maritime transport sector.

Summary of strategic priorities and action themes

Efficient transport chains that support competitiveness

The aim is to ensure that Finland's foreign trade and domestic waterborne transport are free of disruption, are cost-efficient for the national economy and guarantee international competitiveness, also in the winter months. To secure Finland's national competitiveness, fairway dues, even after 2017, should not be a greater burden for maritime transport than at present.

- A network of fairways will be developed and maintained to meet the needs of maritime transport and inland navigation.
- The outmoded definition of winter ports will be discontinued. The fairway dues system will be revised. Service levels for icebreaking will be reviewed in the medium term.
- The contingency preparations in maritime transport and port operations will be developed further as part of a comprehensive logistics system.
- Maritime cluster cooperation will be enhanced. The competitiveness of ports will be strengthened by providing incentives for them to develop their service functions, by improving the operating environment through reducing the administrative burden and by enabling greater logistical efficiency through enhancing the usability of information.
- A national service point will be developed on the basis of the existing vessel traffic data management system, which will reduce the administrative burden on businesses.

Green growth from strong maritime cluster

The aim is that Finland will become a frontrunner in winter and environmental technologies for shipping and an exporter of leading expertise in these maritime technologies. Finnish shipping company operations will be dynamic and competitive.

- New forms of long-term cooperation between operators in the sector will be developed.
- Financing opportunities for vessel investments will be improved in order that sufficient number of vessels can be modernised and replaced, and opportunities for new financing arrangements will be investigated, also taking into account the opportunities offered by the European Investment Bank and the Nordic Investment Bank.
- Efforts will be made to advance the development and take up of alternative fuel solutions, and the LNG Action Plan for Shipping 2013–2017 will be implemented.
- An increase will be sought in Finnish clean technology ('cleantech') project start-ups and in their financing and marketing.

Finland – leading expert on sea and ice
 "Finland as a global centre of winter navigation know-how and Arctic expertise"

Sufficient numbers of experts will be secured in maritime transport and for the maritime cluster, and awareness of the maritime transport sector will be improved along with its image and appeal.

Seafarer training

- Support will be given for national networking of secondary-level education institutions and polytechnics, and the scope for shared use of resources and investments (e.g. training vessel and top-grade simulator) will be investigated.
- The qualifications system for the sector will be developed to make it more closely oriented to employment needs.
- On-board training will be improved in collaboration with operators in the shipping sector.
- Career paths will be developed and further training in higher education institutions will be expanded.

Maritime cluster competence and Arctic expertise

- Support will be given for implementation of the measures concerning training, research and expertise in the maritime cluster as proposed by the Maritime cluster working group set up to examine the competitiveness of the maritime industry in 2020.
- The measures proposed in Finland's Strategy for the Arctic Region concerning training, research, business and international cooperation will be implemented in order to strengthen the operating preconditions for Finland's Arctic maritime industry and shipping company operations.
- Finland will become a global centre of winter navigation know-how and Arctic expertise.

Baltic Sea – a sea of opportunities

The aim is that the Baltic Sea will be safe and healthy, which will attract recreational activities and tourism to the region and high-quality sea transport services for use within the market area. A further aim is that the Finnish maritime transport sector will be the Baltic Sea region's leading service provider based on sustainable logistical concepts.

Environment and safety

- In seeking to improve the state of the Baltic Sea to a good level by 2020, Finland will act responsibly within the EU and in accordance with international commitments.



- In the environmental regulation of maritime transport, Finland will primarily seek international regulation through the IMO.
- The risk of oil and chemical spill accidents in the Baltic Sea will be minimised and the readiness to prevent and respond to these will be enhanced.
- The safety and convenience of maritime transport will be secured and its environmental effects minimised through national and cross-border cooperation.
- Finland's maritime rescue services will be enhanced.
- Cooperation and information exchange between maritime authorities will be improved, and strategic performance goals defined.

Businesses

- Russian transit traffic will be encouraged.
- Cruises and other tourist activity in the Baltic Sea and in Finland's inland waters will be encouraged.
- Finnish shipping company operations in the Baltic will be strengthened.

International activities

Forward-looking oversight of interests, focused international partnership

Maritime transport is global, and regulations are adopted at a global level in the IMO. This ensures extensive harmonisation and equal treatment of ships. Maritime transport is also regulated by the European Union. Cooperation in environmental and safety matters concerning maritime transport will also be undertaken within the Baltic Marine Environment Protection Commission (HELCOM).

Finland will be an active international actor

- Finland has a pro-active and resolute approach to influencing the handling of environmental and safety matters within the IMO, the EU and HELCOM.
- Cooperation will be enhanced at national level to improve the ability to influence matters pro-actively within the EU and internationally.
- To further develop shipping company operations and the maritime cluster, bilateral international cooperation and public and private partnerships will be strengthened, especially with the Nordic countries and Russia.
- Finland will take an active role, as set out in its Strategy for the Arctic Region.
- Sufficient resources will be secured for actions at international level.

Finland's priorities in exerting its influence at international and EU level in the maritime transport sector are:

To influence matters successfully it is important that all the stakeholders convey a joint message to international forums on matters that are important for Finland's interests.

- Finland must, in all situations, be able to meet the challenges of winter conditions and winter navigation in Baltic Sea shipping.
- In the formulation of EU regulation, Finland's accessibility must always be secured (e.g. Trans-European Transport Network (TEN-T)).
- The adoption of new regulations on environmental and safety issues in maritime transport must be made primarily by the IMO.

2. Outlook for the future

With a long strategy period it is paramount that the trends and directions of the coming years are taken into account as well as possible, so that choices made on the basis of the strategy will be appropriate and meet anticipated needs. Alongside the long-term planning and development work, it is also important to be agile and flexible in adapting and responding promptly to changes occurring in the operating environment.

2.1 Major impact on maritime transport sector from continuing economic uncertainty and structural changes in Finnish economy

The global economy and economic conditions in Europe will continue to have a considerable impact on the Finnish maritime transport sector. Changes in industrial, business and regional structures will have a critical effect on the trends in maritime transport. The pace of structural change, and thus changes in traffic flows, is tied up with the general development of the economy. Finnish production is reliant on exports but is also dependent on imports. Sea cargo volumes began to decline in 2009 as the recession took hold and did not return to a recovery track until 2013.⁶ Forecasts show that in the next few years growth in the global economy will be slow. The forecasts are, however, very tentative, and the uncertainties in the global economy make assessments difficult.

The outlook for the forest industry, which is a key industry for Finland, is uncertain, but forecasts indicate that its role in transportation will remain fairly prominent in the future, too. For the metals industry the changes appear less dramatic due to the nature of production and the large size of the units.⁷ The mining industry is forecast to grow in future years, despite price changes in world markets. Transport movements in the mining industry are currently via the Bothnian Bay ports. If the forecast growth in mining takes place, this is expected to have a major impact on maritime transport movements. However, the time frame for implementation of these mining projects is considerable, and there is still uncertainty about whether they will proceed. Neither is it clear which routes would be used for mine traffic if mining activity is begun in northern regions.

Finnish maritime transport in numbers

- ✓ The maritime cluster employs approx. 43,500 people.
- ✓ There were 9,469 people in seafarer occupations in 2012.
- ✓ Finland's Register of Ships listed 1,213 registered vessels at the end of 2013 (gross tonnage 2,019,120 units).
- ✓ The Register of Merchant Vessels listed 118 vessels at the end of 2013 (gross tonnage 1,727,364 units).
- ✓ The Finnish merchant fleet transports approximately 30% of Finland's sea freight.
- ✓ Imports to Finland by sea in 2013 amounted to approx. 49.3 million tonnes, or about 80% of all imports.
- ✓ Exports from Finland by sea in 2013 amounted to approx. 47 million tonnes, or almost 90% of all exports.
- ✓ 80% of cargoes are transported via Finland's 10 largest ports.
- ✓ Transit traffic via Finland's ports totalled 7.54 million tonnes in 2012.
- ✓ Passenger traffic to and from Finland amounted to 18.2 million passengers in 2013.

Statistics: Meriteollisuus ry (Finnish Marine Industries), the Finnish Transport Safety Agency and the Finnish Transport Agency

A major factor affecting transport movements will be Russia's political and economic development, because Russia contains substantial markets. The country's recent accession to the WTO and its growth in trade and commerce will affect volumes of Russian traffic considerably. Russian traffic also plays a major role in the amount of transit traffic travelling via Finland. The trend in transit traffic and in Russian traffic will depend considerably on Russia's progress with its

⁶ Trend survey on maritime transport, Finnish Transport Agency 2/2013. (In Finnish)

⁷ Trend survey on maritime transport, Finnish Transport Agency 2/2013. (In Finnish)

port projects, the competition from other littoral States of the Baltic Sea for transit traffic and the overall performance of Finland's transport chains (including the land-based transport network and border crossing points).

The most critical development factors identified for the operating environment in economic terms are globalisation and the shift of emphasis towards Asia. The global challenges identified are climate change and especially the increase in CO₂ emissions and fuel price rises. The rapid development of technology will change traditional maritime transport and also bring opportunities.⁸ New ways of meeting the growing energy needs will be reflected in global transport flows in the future, for example if there is an increase in locally based energy production. The value added to products between being imported and later exported will also increase. There may also be longer term changes in maritime transport volumes, directions and routing as a result of new transport routes (e.g. Rail Baltica and connections via the Northern Sea Route and the Northwest Passage) and environmental regulations applying to maritime transport.



Figure 2. If a ship carrying 1,000 containers were replaced with road transport, this would mean about 500 articulated HGVs on the roads.

⁸ Scenarios for Finland's maritime transport 2030, Finnish Transport Safety Agency 3/2013. (In Finnish)

In a changing operating environment maritime transport will nevertheless retain its key position on account of its capacity to transport large volumes, and there is no alternative transport mode that could substitute for it in transporting such volumes of cargo. For example, a vessel carrying 1,000 containers (1,000 TEU⁹) would need replacing on the roads by about 500 articulated heavy goods vehicles, or in rail traffic by 17 freight trains. The huge capacity also enables transport costs to be at a reasonable level. It is expected that for large shipments, the role of sea transport in Finland's exports will remain significant in the future as well.¹⁰

Maritime transport has traditionally been seen in Finland as an ancillary service for industry, but in the future shipping company operations could develop more broadly as a business sector of their own that offers a diversity of export and service products. In the Åland Islands in particular, shipping has a very long tradition, and shipping company operations have been a key sector in the province throughout the ages. Shipping company operations have served not only Finland's foreign trade and passenger traffic, but also cargo traffic between third countries. Shipping companies based in the Åland Islands have often been pioneers in the use of new technology, switching from sail to steam and to modern ship designs. The most recent example is the Viking Grace, which is the world's most eco-friendly and energy-efficient LNG-fuelled passenger ship in a major size class.

2.2 Increasing environmental regulation: a challenge and an opportunity for maritime transport

Maritime transport is a global transport mode that is regulated internationally. Environmental regulations concerning international shipping are negotiated within the framework of the International Maritime Organization (IMO). In the past ten years the IMO has approved a wide range of instruments on vessel emissions, following lengthy preparations, and many of these will come into force internationally only during the present decade. In 2004, a Convention on the handling of ships' ballast water was agreed and is likely to come into force internationally in the next few years. New limits on emissions of sulphur oxide and nitrogen oxide were contained in the 2008 revision of Annex VI to the MARPOL Convention (International Convention for the Prevention of Pollution from Ships).

International Maritime Organization (IMO)

- ✓ Specialised agency of the United Nations with responsibility for improving the safety and security of shipping and for preventing marine pollution by ships.
- ✓ 170 member States and three associated members.
- ✓ Conventions agreed by the IMO normally enter into force when they are ratified by a certain number of member States with a vessel tonnage of a specified level.
- ✓ IMO member States are responsible for national implementation of the regulations.
- ✓ The SOLAS Convention (International Convention for the Safety of Life at Sea) deals with the safety of maritime transport.
- ✓ The main environmental regulations are the MARPOL Convention (International Convention for the Prevention of Pollution from Ships) and its six Annexes (I-VI), the AFS Convention (2001) on the control of harmful anti-fouling systems on ships, the Ballast Water Management Convention (2004), and the Ship Recycling Convention (2009), also known as the Hong Kong Convention.
- ✓ The STCW Convention sets out rules on standards of training, certification and watchkeeping for seafarers.

The harmful effects of ships' emissions on the environment and the air quality of coastal areas, and hence on people's lives, can today be monitored better than ever and information on the effects can be disseminated more widely. Regulations on sulphur emissions will enter into force on 1 January 2015. Finnish legislation is based largely on the

⁹ TEU (twenty-foot equivalent unit) is the basic capacity measurement unit for container transport, in which the container is 20 ft long, 8 ft wide and 8.5 ft high.

¹⁰ Scenarios for Finland's maritime transport 2030, Finnish Transport Safety Agency 3/2013. (In Finnish)

provisions of the IMO conventions. In recent years, the EU has also increasingly incorporated IMO regulations into EU legislation. The EU has also established a goal of reducing the greenhouse gas emissions from shipping by 40% – and, if possible, even by 50% – from the 2005 level by the year 2050.

The main areas of focus of the 1992 Convention on Protection of the Marine Environment of the Baltic Sea Area and its governing body the Helsinki Commission (HELCOM) are to find means to reduce illegal discharges of ships' waste, to make the implementation of and compliance with the relevant IMO Conventions, including the MARPOL Convention, effective within the Baltic Sea, and to bring about environmental protection regulations on pleasure craft.

Climate change and the process of adapting to it represent major global challenges for the future. The IMO has also begun to take action to limit greenhouse gas emissions from shipping through technical, operational and in the longer term market-based measures.

In July 2011, the IMO approved binding energy efficiency regulations for all new ships, which will improve the ships' energy efficiency rating (energy efficiency design index (EEDI)). The measures will lead to a drop in fuel consumption and therefore in CO₂ emissions. It is anticipated that the entry into force of the third phase of the EEDI rules in the 2020s will mean reduced engine power for new merchant ships in Baltic Sea shipping and thus leads to a greater need for icebreakers, despite the rules incorporating – on Finland's initiative – a corrective coefficient for ice-strengthened ships.

The IMO is currently also working on rules for monitoring ships' fuel consumption, and in the longer term the idea is to discuss market-based measures such as the pricing of a tonne of CO₂. The aim of the current international climate negotiations is that a legally binding international instrument for cutting greenhouse gas emissions will be completed in 2015 for entry into force in 2020. The international climate talks will also affect the IMO negotiations on limiting CO₂ emissions from shipping, although the intention is that the actual decision on these emissions from international shipping will be made by the IMO. The EU is currently preparing a regulation on the monitoring of CO₂ emissions from ships. The idea is that this work will also support the work being carried out at the IMO.

The greatest concern in the short term is associated with the sulphur emission regulations that will enter into force from the beginning of 2015, as these will add to transport costs for shipping. While the health and environmental benefits of the new regulations are beyond dispute, there will be challenges due to the unbalanced distribution of the costs and benefits associated with the new limits, especially among EU Member States. The rules will apply in specified sulphur emission control areas (SECAs, including the Baltic Sea, the North Sea, the English Channel and around the North American continent), where the sulphur content of fuel will not be permitted to exceed 0.1%.

The revised version of the MARPOL Convention's Annex VI on the Prevention of Air Pollution from Ships, approved in 2008, also allows the IMO to decide on establishing nitrogen oxide (NOx) emission control areas (NECAs) for ships upon application by littoral States of the sea area in question. The Baltic Sea littoral States have for a number of years been preparing an application to the IMO for designating the Baltic Sea as such a control area, in accordance with the HELCOM Baltic Sea Action Plan approved in 2007. Submission of the application to the IMO requires unanimity on the part of the littoral States. The matter is still in progress at HELCOM, as unanimity has not yet been attained regarding the timing for submission of the application. Under the 2008 Annex VI on air pollution prevention, the rules concerning NECAs would apply to ships built in 2016 or later that are sailing in areas designated as NECAs. In 2013, based on a proposal by Russia, the IMO decided provisionally that the rules should apply instead to ships built in or after

2021. Under IMO processes, the IMO must confirm the decision at its spring 2014 meeting. After that, HELCOM plans to return to the question of the Baltic Sea NECA.

The Ballast Water Management Convention, approved by the IMO in 2004, is not yet in force internationally. The IMO estimates that the damage caused by invasive species arriving in ships' ballast water amounts to tens of billions of euros annually. A resolution for the entry into force was adopted at the IMO Assembly in November 2013. The resolution grants some temporal flexibility regarding the requirements for installation of the ballast water management system. The Convention also requires port States (dockyards and repair ports) to deal with the sediments that accumulate in the ballast tanks.

The energy efficiency regulations for ships and the limits on sulphur oxide emissions could mean changes in vessel sizes to a certain extent. However, current shipment volumes are guided at least initially by the sizes of existing ice-strengthened vessels and by other logistical requirements and customer needs regarding volumes. Assessments suggest that no rapid differentiation of the Baltic Sea market from the world's other maritime transport is likely.

The future outlook for Finnish shipping company operations will also be significantly affected by the extent and nature of the environmental regulations on maritime transport and the intense competition in the sector. There will be considerable pressure for shipping companies to invest in new, more eco-friendly and energy-efficient vessels. In recent years the profitability of small shipping companies has been fairly poor, due to the general economic situation among other things, which means that shipping companies have found it challenging to obtain financing for new investments. The situation is also considered to have been further hampered by the tough competition and lack of cooperation within the sector.¹¹

Liquefied natural gas (LNG) and other alternative fuel sources are feasible medium- and long-term alternatives for reducing oxides of sulphur and nitrogen, particulate matter and CO₂ emissions. The use of LNG will require effective measures to establish a sufficient distribution network in the Baltic and North Sea areas. The use of LNG will also depend on the price trend for LNG on the world market.

As part of the preparation work for the Maritime Transport Strategy for Finland, a study of the 2030 scenarios for Finland's maritime transport was commissioned from Transport Research Centre Verne. The study identified the maritime transport sector's current strengths and weaknesses and future threats and opportunities, as follows:

¹¹ Fairway to the future. The future of shipping in Finland 2015 and beyond. The Shipowners' Foundation in Finland, PBI Research Institute 2013.

Strengths	Weaknesses
<ul style="list-style-type: none"> • Strong cluster with lots of cooperation • Arctic and winter navigation know-how • Good geographical coverage of port services (ability to meet different customer needs; security of supply) • Transport by sea offers efficient and direct connections to main markets • General cargo traffic to and from Russia supports Finland's logistics and service level • Location in northern Baltic market, close to Russia, Arctic connections 	<ul style="list-style-type: none"> • Variety of systems in use and insufficient collaboration • Major flows of goods reliant on single companies • Finnish port network fragmented, operators small, offering only minor scope for benefiting from economies of scale • Finland's location and attractiveness logistically (dependent on sea transport; competitors closer to markets)
Opportunities	Threats
<ul style="list-style-type: none"> • National cooperation between all concerned will enable successful development of the maritime transport sector • Influencing decisions at international level, international cooperation (especially with neighbouring countries) • Russia: proximity, major market, cooperation • Coastal shipping • Finland and its economic/business policies offer good prospects for success in the maritime transport sector • Environmental restrictions and regulations will boost the development of technology and expertise • Turning maritime transport into a Finnish export product • New shipping routes (e.g. Northern Sea Route) • State actions to support technological development (e.g. ships financed with public funds) • High level of safety and strong safety culture in sensitive Baltic environment 	<ul style="list-style-type: none"> • Short-termism in decision-making; operating environment difficult to predict due to involvement of public sector decisions • Lack of vision in Finnish economic and business policies • Rapid changes in the structure of the sector (especially in areas with high transport need) • Transfer of transport-intensive industrial production away from Finland • Finland's ability to compete weakened by special constraints regarding the Baltic Sea • Rise in transport costs, fall in competitiveness • Shipping companies and ports have limited capacity to invest • Spread of extreme weather events due to climate change and the consequential risks

Table 2. Strengths, weaknesses, threats and opportunities concerning Finland's maritime transport sector.¹²

¹² Adapted from: Scenarios for Finland's maritime transport 2030, Finnish Transport Safety Agency 3/2013. (In Finnish)

3. Efficient transport chains that support competitiveness

3.1 Aiming for transport chains that function reliably and safely

Smoothly functioning, efficient and cost-effective transport is a basic prerequisite for dynamic business activity. A vital goal for Finland is to secure the smooth operation of maritime transport as a component of transport chains all year round and for all parts of the country.

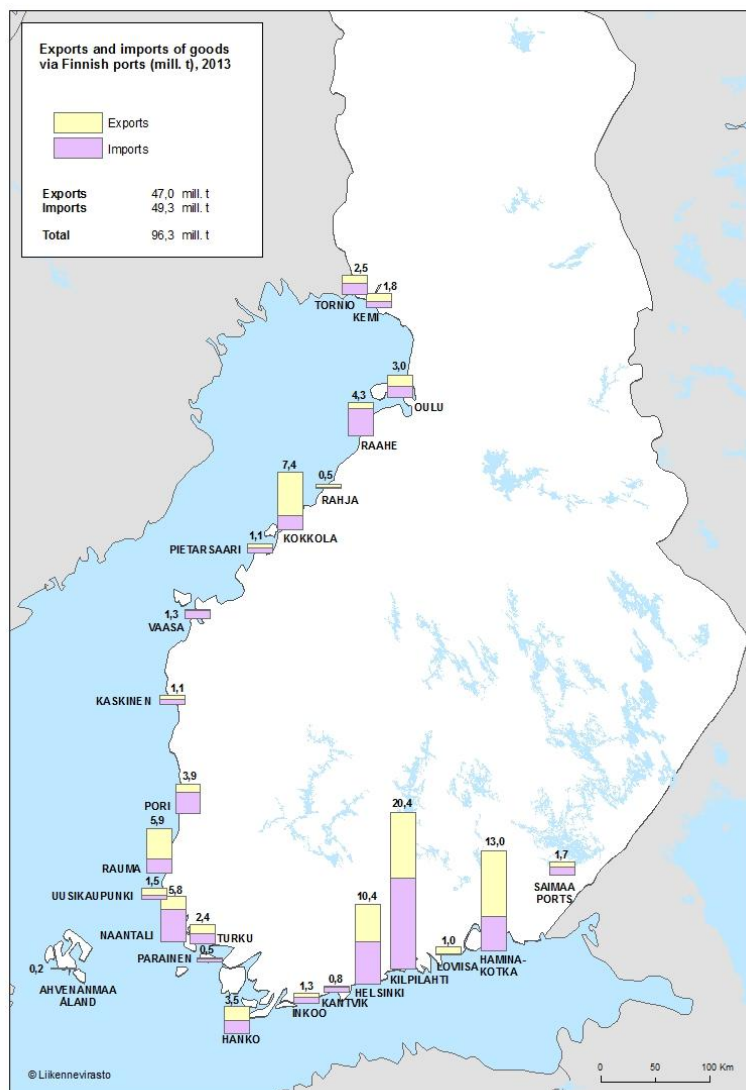


Figure 3. Exports and imports of goods via Finnish ports, 2013 (Finnish Transport Agency).

The basic requirements for reliable seaborne passenger and goods transport all year round include icebreaking services, pilotage and port services and an efficiently operating land-based transport network. The competitiveness of Finland's businesses is directly affected by the growing pressure on logistics costs and by the increasing environmental and quality requirements.

The energy-efficiency of transport also has an important impact on transport costs. The level of energy efficiency is affected by the size of vessel, its capacity utilisation, the characteristics of the route and terminals, the engine technology, speed and the form of energy used. The shipping companies have a key role to play in the use of new fuels in ships, and the suppliers of new fuels are in a key position regarding development of the necessary fuel infrastructure.

In 2013, a total of 96.3 million tonnes of cargo were transported via Finland's ports, of which exports ac-

counted for over 47 million tonnes and imports for 49.3 million tonnes. This goods traffic also benefits from the density of passenger services between Finland and Estonia and between Finland and Sweden. Currently about 10 million tonnes, or around a quarter, of the general cargo traffic goes by ships that also carry passengers. Finland's international sea traffic uses altogether about 50 Finnish ports. Approximately 80% of the internation-

al cargoes are carried via the country's 10 largest ports: Sköldvik, HaminaKotka, Helsinki, Kokkola, Rauma, Naantali, Raahe, Hanko, Pori and Oulu.¹³

Ports are critical nodes in the supply chain. They also have a relatively high impact on overall delivery times and transport costs. Finland has a very wide network of ports, which is often considered to detract from the efficiency of the overall system. However, a dense port network enables the maritime transport component of international traffic to be maximised, bringing savings in costs and energy efficiency. A major effort to concentrate the traffic through fewer ports would require significant development of the road and rail infrastructure and services. Future development of the transport system must also take into account the need to deepen port fairways, which is necessary for reasons such as the increasing size of vessels and the growing transport needs of the extractive industry.

There are also capacity problems in the service level offered by land-based transport links to the ports, especially in the case of the rail network. Furthermore, the pricing of rail transport has reduced the opportunities for operating an efficient multimodal transport chain. Development of land-based transport links to the ports must be carefully planned and with a long-term approach, as network investments cover the longer term and have an impact far into the future.

The EU's Blue Belt action plan aims to create a single market for maritime transport, where vessels would be able to operate within the EU customs zone without customs formalities. This would reduce the administrative procedures for ships and would improve the efficiency of sea transport. The Blue Belt package covers two key matters: development of the conditions for a regular shipping service (RSS) customs facilitation scheme, and development and deployment of an electronic cargo manifest system (eManifest). The Single Window system of national centralised service points being constructed by June 2015 will support the development of the eManifest system. It is technically feasible to implement the Blue Belt action plan by using traffic and customs management systems that already exist or are under development. Introduction of the Blue Belt action plan will improve the operating conditions for merchant shipping and its efficiency.

3.2 Ensuring security of supply in disruptive situations

Disruptions to data and communications systems and networks, interruptions in energy supply, serious problems for the health and functional capacity of the general population, and environmental accidents are all significant factors that would threaten the functioning of society. A crisis that temporarily hampers the nation's ability to produce critical products and services, or to acquire them from abroad, would be deemed an external threat to the security of supply of the most serious kind.¹⁴ Maintaining society's security of supply requires special measures to ensure the availability of a sufficient Finnish-flagged ice-strengthened fleet that could secure transport movements important for industry and society under all circumstances. It is also essential that there are contingency preparations in place for the entire maritime transport logistics system and its related critical infrastructure to guard against any serious disruptions that may occur under normal circumstances.

The smooth and reliable operation of the transport system can be threatened by disruptions due to particular weather and ice conditions (e.g. in winters with severe ice conditions), accidents, technical faults, natural disasters, labour market disruptions, human error or other factors. Society is nowadays more vulnerable to disruptions as systems

¹³ Statistics on international shipping 2012. Statistics from the Finnish Transport Agency 7/2013.

¹⁴ Government decision on the objectives for the security of supply 2013.

have become more technical, functions have been outsourced and extensive and complex supply chains have proliferated. Widespread delivery disruptions will also affect the reputation of Finnish suppliers in international trade. Any impression of unreliability in goods deliveries would hamper the creation of new contracts and significantly weaken the competitiveness of the export industry.

The Government has decided a set of objectives for the security of supply¹⁵, based on the legislation covering these issues. The Ministry of Employment and the Economy is responsible for enhancing cooperation between businesses and the security of supply authorities, but each ministry is required to develop the security of supply within its own sphere of operation. The Ministry of Transport and Communications' responsibility for maintaining and developing the operating conditions for the country's transport logistics system and electronic communications infrastructure includes consideration of the security of supply issues. The logistics infrastructures that must be secured are the main transport routes, ports, airports, goods and passenger traffic stations, terminals and warehousing, and data and security systems. Consignments of energy, chemicals and food are the most critical elements of goods traffic to be secured. To ensure security of supply it is important to secure not only a sufficient domestic base of companies and equipment but also expertise.

In regard to society's vital functions, maritime transport has a key role in the overall security of Finnish society. The Security Strategy for Society (2010) describes the functions that are vital for society and specifies different tasks for the Government's various administrative branches in order to secure these vital functions. For maritime transport the Ministry for Foreign Affairs, for instance, is responsible for securing the conditions for Finland's foreign trade, and the Ministry of Transport and Communications is responsible for securing the continuity of transportation. Among the functions vital to society, the functioning of the economy and infrastructure is directly linked to the maritime transport sector, while the sector has indirect links to the vital functions of defence capability, income security and people's capability to function.

3.3 Ensuring waterborne transport is free of disruption and cost-efficient for the national economy, also in the winter months

Icebreaking is an essential service for Finland's maritime transport on account of the country's climate and geographical location. All of Finland's seaports have ice conditions in winter, though the need for icebreaking services varies from one winter to the next. The factors influencing this and winter navigation in general are the extent and characteristics of the ice, the traffic needs and the alternatives that may be available, the number of winter ports, the number of vessels calling in, the vessels' ice performance capabilities, the expertise of crews and the nature of the assistance service provided.

Currently, nine icebreakers are needed in normal and moderately severe winters in order to maintain the targeted service level. The current targeted service level for icebreaking is that the average waiting time for vessels requiring assistance should be kept below four hours and that more than 90% of vessels should get to their destination without any wait.

Businesses are relatively satisfied with the current winter navigation service level. Dissatisfaction is caused mostly by the level of icebreaking resources available during winters that are distinctly more severe than normal, which means one

¹⁵ Government decision on the objectives for the security of supply 2013.

or two per decade. The last winter with severe ice conditions was 2010/11, when all sea areas along the Finnish coast were ice covered and there was ice in the northern Baltic Sea from the top of the Bothnian Bay all the way to Gotland, and in all coastal areas around the Baltic. The severity of a winter is determined not only by the extent of ice cover but also by the duration of ice conditions, the ice thickness, the amount of heavy pack ice and pressures created. The delays experienced by ships could be reduced from time to time if improvements were made in the contingency preparations for difficult winters, which would in practice mean acquiring further icebreaking capacity. In difficult winters the shipping problems occur across a broader sea area than in ordinary winters, covering areas where less icebreaker assistance is normally needed. The number of parties that would benefit from additional icebreaking capacity would therefore be considerable. A rough estimate indicates that the annual cost of maintaining and using additional capacity for difficult winters (EUR 5–15 million) would be of the same order of magnitude as the costs to shipping companies of delays to vessels caused by a single severe winter. It is not possible to estimate the wider effect on logistics and production costs, even in broad terms, but this would be greater than the figure given above.

Finnish maritime transport in winter

- ✓ Ice cover, characteristic of the Baltic Sea in winter, normally hampers shipping that uses ports in Finland, Estonia, Sweden and Russia's Baltic coast.
- ✓ In difficult winters all littoral States of the Baltic Sea have to resort to icebreakers to keep their ports in operation.
- ✓ Icebreaking costs in Finland average EUR 50 million per year.
- ✓ Finland has five conventional and two multipurpose icebreakers, and one tug able to assist in easier ice conditions and in the archipelago.
- ✓ Finland's icebreakers have been in service for an average of 29 years.
- ✓ The State-owned Arctia Shipping Ltd is responsible for providing most of the icebreaker services.
- ✓ The procurement of a new icebreaker is in progress. It will enter service in the winter of 2015/16. The new icebreaker is being ordered by the Finnish Transport Agency and its operation will be separately put out to tender.
- ✓ Traffic in Lake Saimaa is assisted in December, January and April, and in northern Saimaa in May as well.

Currently, vessels meeting the ice performance requirements are assisted to 23 winter ports in Finland and also inland in the Saimaa Canal and the Saimaa network of deep-water fairways. The current definition of winter ports is based on a 1993 decision by the Finnish Maritime Administration and no longer meets the winter navigation needs of today's businesses.

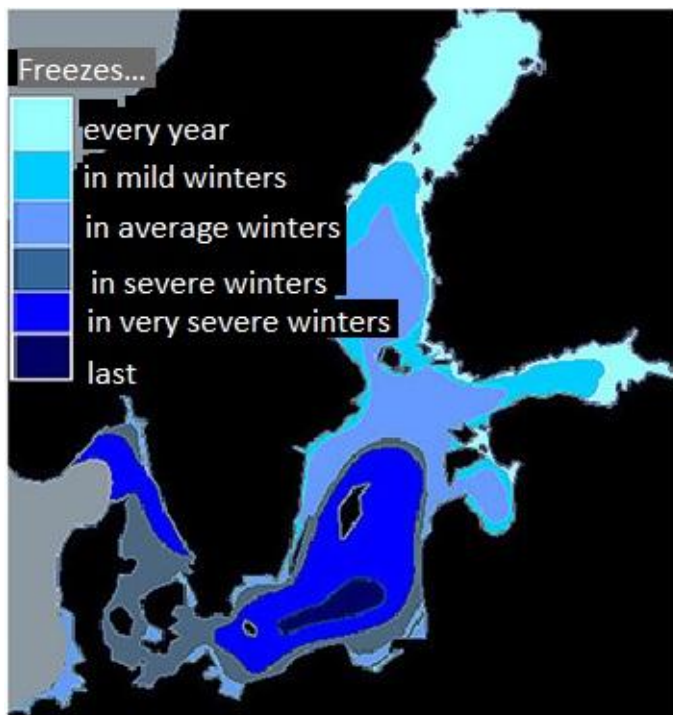


Figure 4. Variations in Baltic Sea ice cover.

Finland's basic icebreaking capacity consists of five conventional icebreakers. Contingency preparations exist for providing additional capacity in severe winters and for the busiest periods, and this is mainly in the form of less efficient icebreakers contracted for shorter periods through a competitive tendering procedure. The high age of Finland's icebreaker fleet (average 29 years) means that in the coming years there will be a need to renew this icebreaking capacity. Calls for tenders for icebreaking services are made by the Finnish Transport Agency, which also subsequently orders the services. The Agency

needs to be certain of the availability of icebreaking capacity at least four years ahead, because there is only limited capacity available and the construction of new capacity can take several years.

In 2004, a client-provider model was adopted for icebreaking, with the hope that this would give rise to competition in the provision of icebreaking services and that the operations would become more efficient in the longer term. The benefits of this change have not materialised to the extent intended. The absence of any operators genuinely offering open-water icebreaking services prevents the creation of a Baltic icebreaker market and thus the hoped-for efficiency improvements.

The need for icebreaker assistance is forecast to grow in the years to come, when traffic volumes will increase and the ice performance capabilities of new merchant ships will be reduced due to the IMO's energy efficiency rules concerning the structure and engine power of ships. These IMO rules are to become more stringent in stages up to 2025.

In 2011, the Government Programme stated that in order to safeguard winter navigation of critical importance for the Finnish export industry *preparations will be made for the renewal of the icebreaker fleet*. With this in mind, the State's 2013 budget contained a provision for the procurement of one new icebreaker. The new icebreaker will be optimised for efficient assistance in all ice conditions in the Baltic Sea. It will also incorporate oil spill prevention and response and emergency tow capacity for open-water conditions, which will guarantee the vessel's year-round use. The new icebreaker will be acquired for the Finnish Transport Agency, and the vessel's crewing and maintenance (duties of the managing shipping company) will be put out to tender separately, covering a period of several years. The tendering process is expected to mean a reduction in costs. In February 2014, the Finnish Transport Agency signed an agreement with Arctech Helsinki Shipyard for the new icebreaker. The icebreaker will be brought into service in winter 2015/16.

Alternative models for arranging winter navigation and for specifying the service level were examined in the preparation of the Maritime Transport Strategy for Finland.¹⁶ The aim of icebreaking is to ensure that Finland's foreign trade and domestic water-borne transport are free of disruption, are cost-efficient for the national economy and guarantee international competitiveness, also in the winter months. Based on the study made, it was concluded that no radical changes are needed in the next few years in the way in which icebreaking is arranged or the service level. These services have been steadily developed over the years and closely meet the needs of the parties concerned. In the strategy period 2014–2022, icebreaking services will be provided and developed in accordance with the following principles:

- The supply of icebreaking services will be arranged flexibly, adjusting to changes in traffic volumes and the ice performance capabilities of new merchant vessels.
- The fairway dues criteria, ice class rules and other control mechanisms will be used to ensure winter navigation is sustainable and is cost-effective in advancing international competitiveness in the longer term.
- The Finnish Maritime Administration's decision about Finland's coastal winter ports will be repealed. Icebreaking services will in future be offered for all ports with a VL1-class fairway that is at least 8 metres deep. For vessels travelling to and from

¹⁶ Specifically, the alternatives examined, together with a provisional assessment of their effects, are described in a study commissioned in conjunction with the strategy work, on assessment of the effects of alternative icebreaking models. Publications of the Ministry of Transport and Communications xx/2014, published in spring 2014.

other ports along or beyond these fairways, assistance will be provided only in the section of VL1-class fairway with a depth of 8 metres.

- The same standard of icebreaking will be arranged for all the ports referred to above, with the aim that the average wait will not exceed four hours and that more than 90% of the vessels requiring assistance will not have to wait.
- In Saimaa, assistance will be provided in the Canal and to ports in Saimaa's deepwater fairway network.
- The operating principles for difficult winters will be developed in close cooperation with businesses. The aim will be to scale contingency preparations according to the severest winters, so that even disruptions caused by extremely difficult ice conditions do not unreasonably interrupt maritime traffic.
- In the medium term, once the effects of transforming ports into limited companies and the impact of other changes in the operating environment have become evident, an evaluation will be made of the potential for arranging icebreaking in a way that turns the service level into a competitive advantage and a key specialisation area for Finnish ports. In practice, this would mean that ports could, if they wish, purchase an improved service level on top of the basic service provided by the State (a significantly lower level than at present), for an additional charge. The State would nevertheless guarantee the basic service for all ports and the system would not automatically require ports to pay additional charges if the basic State service is sufficient. The level of icebreaking costs and fairway dues and the charge to ports for additional services should therefore be assessed as a whole so that the ratio of icebreaking costs and revenues would, in the long term, be at the level required by the State. A model of the type presented could be ready for introduction as early as the start of 2018.
- To ensure customer-orientation and cost-effectiveness, there is a need to harmonise the service levels of icebreaking and pilotage, and to further develop the co-ordination of work in the field and the flow of information to land-based organisations.
- The use to which maritime transport data is put will be developed further in order to comprehensively improve the efficiency of winter navigation.
- Through close international cooperation, resource allocation and use will be optimised. The icebreaking and personnel capacity required for critical security of supply will be provided cost-effectively and through State ownership. More detailed arrangements will be investigated during 2014.
- When renewing or allocating icebreaking capacity, attention must also be given to the year-round usability of the vessels in e.g. oil spill prevention and response duties, especially in the Baltic Sea.
- In cooperation with other States in the northern Baltic Sea area, permanent EU funding to minimise the adverse impact on competition due to winter navigation will be secured.

The future need for icebreaking capacity will be assessed after the completion of the Finnish, Swedish and Estonian authorities' joint WINMOS project in 2015. An investment programme for the icebreaker fleet will also be drawn up. The aim is to ensure the security of supply, overall cost-efficiency and the most flexible use of shared resources.

3.4 Supporting the competitiveness of sea transport for Finnish businesses – fairway dues to be no greater burden for maritime transport than at present

The Act on Fairway Dues applies to ships engaged in merchant shipping in Finnish territorial waters. Fairway dues are payable when a vessel arrives in Finland from abroad or arrives in a Finnish port from another Finnish port. The fairway dues are based on the vessel type, size and ice class and the number of visits. Fairway dues cover the costs

incurred by the State in the construction, maintenance and care of public fairways used for coastal commercial navigation and essential safety devices for waterborne traffic, and in the provision of vessel traffic services and icebreaker assistance. These costs have risen and fallen for various reasons, such as a change in service levels and exceptional winter ice conditions.

The ratio of costs and revenues for fairway dues has varied from one year the next.¹⁷ In most of the early years following 2000, revenue from fairway dues covered the costs. In 2009, however, the situation turned into one of deficit when the recession reduced the volume of maritime traffic and, in turn, the revenues from fairway dues. At the same time, the rise in icebreaking costs in particular has increased the amount of costs that need to be covered. In 2012, after an increase in fairway dues, the revenue and costs were again in balance, with revenues covering 99% of costs.

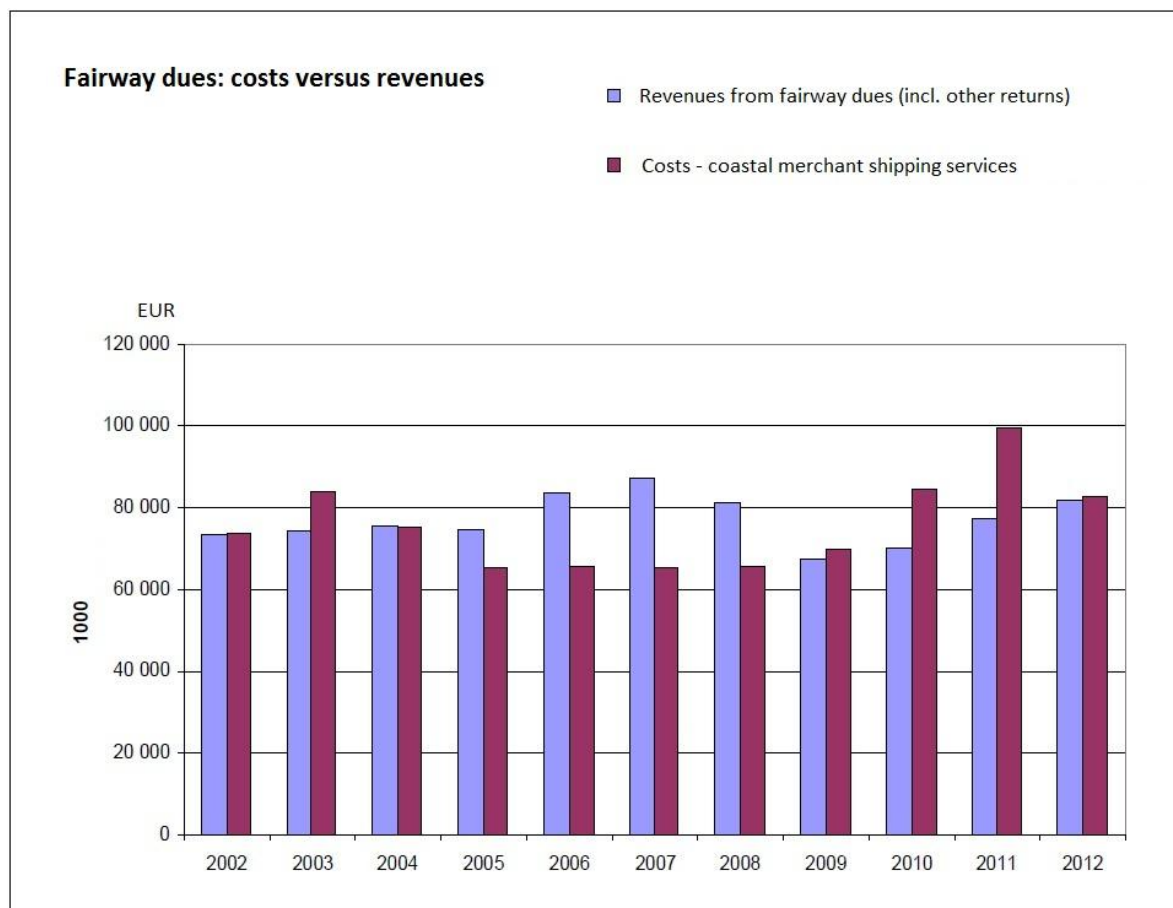


Figure 5. Fairway dues: costs versus revenues, 2002–2012.¹⁸

The fairway dues system has also been used as an economic tool, for instance in the promotion of maritime safety. Staggering the fairway dues according to the vessel's ice class has secured lower dues for ice-strengthened ships. Ships with better ice properties (structure, ice-strengthening, engine power) need less icebreaking assistance. The risk of accidents is thus lower and the need for State-provided icebreaking services is correspondingly reduced. The waiving of fairway dues after a specified number of port visits has supported frequent and regular flows of goods and passengers to Finland.

¹⁷ Preparing for a reform of fairway dues. Working group report. Publications of the Ministry of Transport and Communications 22/2013. (In Finnish)

¹⁸ Preparing for a reform of fairway dues. Working group report. Publications of the Ministry of Transport and Communications 22/2013. (In Finnish)

In August 2013, Prime Minister Katainen's Government declared that fairway dues will be halved in the period 2015–2017 in order to compensate for the additional costs arising from the Sulphur Directive, among other things. Industry had hoped that fairway dues would be removed entirely and the costs of icebreaking and fairway maintenance covered directly from the Budget as with other modes of transport. From a transport policy viewpoint, transport pricing for all forms of transport, nationally and at the European level, is increasingly being developed on the basis of the 'user pays' principle, in order to obtain improved control. With this in mind, the complete abandonment of the fairway dues system cannot be considered appropriate in the current decade. However, the cost of winter navigation for Finland's maritime transport should be treated as an unfavourable circumstance affecting a specific region, and this should be ameliorated through the provision of permanent and significant EU support.

The Ministry of Transport and Communications is preparing proposals for a revision of the Act on Fairway Dues by which a fixed-duration reduction of fairway dues could be in force from the start of 2015. At the same time it would be possible to incorporate in the Act the adjustments related to technical legislative procedure as proposed by the fairway dues working group set up by Minister of Transport Merja Kyllönen concerning e.g. the fairway dues for ships travelling in the Saimaa area and from there to coastal ports and also releasing icebreakers from the need to pay fairway dues. In its conclusions the working group considered that there is no need to raise fairway dues and that the ratio of costs and revenues for fairway dues should in future be examined as an average over several years, for instance every three to five years. Environmental management of vessel traffic will be achieved mainly via the international standards applying to emissions from ships. The use of environmental regulations to limit emissions of nitrogen oxide is still to be reviewed separately on the basis of the decisions made by the IMO in spring 2014.

To secure Finland's national competitiveness, fairway dues, even after 2017, should not be a greater burden for maritime transport than at present. Fairway dues must nevertheless be set at such a level that will not jeopardise the full and proper maintenance of fairways. The need to renew the icebreaker fleet that ensures movements of seaborne traffic to and from Finland must not add pressure to raise fairway dues and bring an additional cost burden for commercial transport. Conventional icebreakers will be part of the State's transport infrastructure.

The incentive effect of the fairway dues for vessels in different ice classes must be re-evaluated in the future. One possibility would be to develop a new ice class above the current 1A Super class, which would be primarily for ships that navigate independently through ice and therefore have only a minor need for assistance. This would then be taken into account in the level of fairway dues for vessels in this new ice class. Their minor need for assistance would also be taken into account in the unit prices for fairway dues determined for such vessels. These vessels could obtain icebreaker assistance if necessary but would pay a significant sum for this in such an event. The need to retain the lowest ice class categories could also be critically assessed at the same time, but with due consideration of the operational significance of ice classes in controlling vessel traffic in winter conditions.

3.5 Efficiency through cooperation in arranging icebreaker services

Icebreaking cooperation between Finland and Sweden has developed well over the years and has enabled more effective icebreaker assistance and significant cost savings. It is important to continue the existing cooperation and to further enhance it in the future. In their cooperation over winter navigation both States must observe a winter navigation policy that is convergent and comprehensive. A prerequisite for balanced development of this cooperation is that the costs of providing icebreaker services should be at a comparable level for each State. Currently, Finland's icebreaking costs are considerably higher than those of Sweden. The fairway dues criteria and collection of other payments and the policy regarding limits must also be as convergent as possible to ensure cooperation.

WINMOS winter navigation cooperation project

- ✓ A joint winter navigation project of Finland, Sweden and Estonia aimed at ensuring efficient year-round sea transport and reducing ice-related problems for traffic in the Baltic Sea.
- ✓ The objectives are to increase resources for icebreaking in the future, improve environmental performance and enhance cooperation over national icebreaking services.
- ✓ In 2013 the project was granted TEN-T support totalling just over EUR 29 million.
- ✓ Most of the support applied for is to be allocated to Finland's new icebreaker investment (EUR 24 million).
- ✓ The Finnish participants in the project are the Finnish Transport Agency, Aker Arctic, ILS, the Finnish Meteorological Institute, Imagesoft, Aalto University and Aboa Mare.

As part of the joint WINMOS project involving the Finnish and Swedish authorities, studies are being carried out with the aim of improving the cost-efficiency of icebreaking. This work will take into account changes in the demand for icebreaking services in the coming years, and the impact of the EEDI regulations on the ice performance capabilities of new merchant ships will be modelled and analysed in order to optimise the amount of icebreaking capacity. The results of the WINMOS project will be available at the start of 2016, making it possible to assess the long-term need for icebreaker capacity. The renewal of the vessels must take into account the need to efficiently use the icebreaking capacity that is available across the entire Baltic Sea area and the opportunities for using icebreaking vessels available for charter from the new offshore market, provided that the price and level of certainty regarding availability are at an acceptable level.

Icebreaking cooperation will also be developed with Russia and Estonia. A bilateral treaty between Russia and Finland on icebreaking assistance in the Baltic Sea is due to be signed in spring 2014.

Besides the international icebreaking cooperation, other areas of cooperation between national maritime authorities must also be developed. To ensure full use of all existing icebreaking capacity for future winter navigation needs, it would also be expedient to examine the opportunities for using other vessels with an icebreaking capability that belong to different public authorities.

3.6 Improved efficiency in pilotage will reduce costs and improve the safety of maritime transport

The purpose of pilotage is to further the safety of maritime transport and prevent danger to the environment from shipping. In Finnish territorial waters, pilotage is basically mandatory in the manner laid down in the Pilotage Act. However, it is possible to be exempted from the obligation to use a pilot under certain conditions specified in the Act. The aim of the legislation is to secure the availability of pilotage services and to guarantee equity through uniform pricing. Pilotage services are available for all fairways designated

for pilotage on a 24-hour basis all year round. In Finland, pilotage dues are noticeably moderate by international standards.

The pilotage company Finnpiilot Pilotage Ltd has a duty to provide pilotage service for the whole of Finland. The Board of Directors of the pilotage company decides the unit price for pilotage services. The structure of pilotage dues was renewed at the start of 2012. The purpose of this was to improve the ratio of costs and revenues for pilotage dues, which had worsened with the rising cost level and the decrease in the demand for pilotage. The pricing is based on the amount of work undertaken, and so the pilotage dues are greater for long fairways than for short fairways. An extensive fairway network requiring pilotage represents a significant cost to the public purse. The introduction in 2011 of the new route pilotage exam to be taken in English has reduced the need to use Finnpiilot in pilotage duties. Vessels using route pilotage already account for about 67% of the total, whereas those using Finnpiilot pilotage account for about 33%.

Dues based on a reduced unit price are charged for pilotage in the Saimaa Canal and in the waters of Saimaa, and compensation for this is given through EU-approved State support. The reduced unit price is no more than two thirds of the actual unit price. Proposals on the development opportunities for Saimaa pilotage were issued in a rapporteur's report in May 2013.¹⁹

To improve the efficiency of pilotage, the pilotage service level determination should correspond more closely to pilotage service needs. The definition of the pilotage service level should be revised so that the service obligation could differ for each port according to the service that is needed. This service level rearrangement could be achieved through ownership steering. Along with vessel traffic services (VTS) and winter navigation assistance (icebreaking), pilotage helps guarantee the safety of maritime transport. It is important for the efficiency of the system that the service levels of these functions are compatible. As information systems and technologies develop and automation increases in transport, there must also be a readiness to re-examine the way in which these services are arranged.

3.7 More efficient port operations and improved competitiveness for ports

Finland's ports and port services have developed in response to the needs of industry and society. The future development of the network will also be in accordance with the needs of industry and other customers. The ports are either in municipal or private ownership. The future outlook for the ports is determined to a significant extent by the forecast of slow economic growth in the years to come. The future development of Finland's ports will be influenced by changes in the country's regions and industrial structure, the transformation of ports into limited companies and the development of the EU's single market. The weak economy has affected the demand for transport and thus resulted in unutilised infrastructure and service capacity at the ports.

New challenges are emerging for port operations and infrastructure, such as an increase in the size of vessels and loads and new environmental requirements, for instance for waste disposal. The Sulphur Directive may also have an impact on ports and the conditions for their economic operation if changes are made to shipping routes, vessel sizes or traffic volumes as a result of the cost implications of the sulphur provisions.

¹⁹ Pilotage cost structure and development opportunities in the Saimaa water system. Rapporteur's report 2013 (Publications of the Ministry of Transport and Communications 17/2013). (In Finnish)

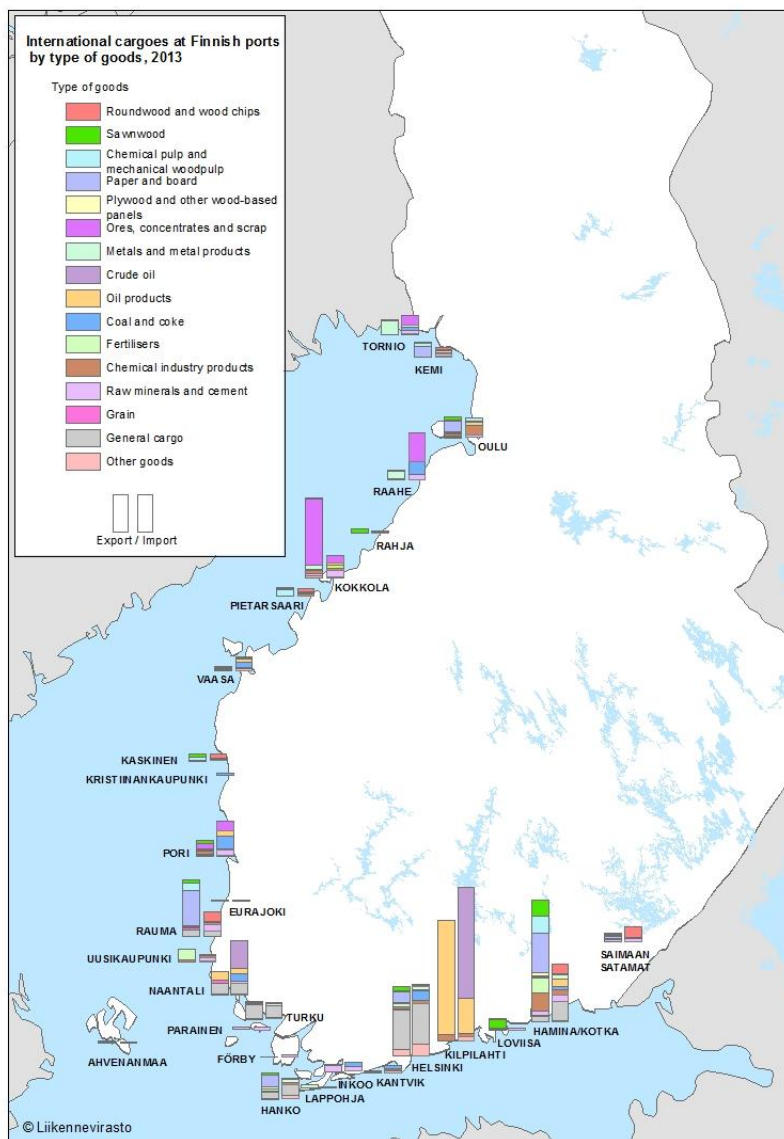


Figure 6. International cargoes at Finnish ports by type of goods, 2013 (Finnish Transport Agency).

Port companies and port authorities are primarily responsible for the ports' infrastructure development, maintenance and marketing and often also for tying up and casting off ships, vessel water supply and waste management services and towing and icebreaking services in the port area. The costs of service provision and maintenance are covered by the port charges and rental income. Some ports also offer their customers electronic data transmission services, customs warehousing and various transport services. Smooth information flow and data transmission have also become a more important part of transport chain operations.

Cargo handling in port areas and the provision of logistics services are the responsibility of private port operators. The task of terminal services and port operation is to link the parts of the transport chain to each other and to offer vari-

ous added value services. Services provided by operators include ships' cargo handling services (stevedoring), terminal services (e.g. site services, warehousing, container depot operation, container stowage, delivery of cargo), forwarding (export and import clearance, customs clearance, documentation) and shipping company services.²⁰

The ports compete with each other for cargoes, especially through the range of services offered. They also compete for transit traffic particularly with ports in Russia and the Baltic countries. The strengths, weaknesses, threats and opportunities of Finnish ports have been identified in a report²¹ on the competitiveness and development needs of port operations, commissioned from consultants.

²⁰ Competitiveness and development needs in port operations. Background study on port policy (to be published in the publications series of the Ministry of Transport and Communications in spring 2014). (In Finnish)

²¹ Competitiveness and development needs in port operations. Background study on port policy (to be published in the publications series of the Ministry of Transport and Communications in spring 2014). (In Finnish)

Strengths	Weaknesses
<ul style="list-style-type: none"> • Smoothly functioning port operations • Reliability • Quality and professional expertise • Infrastructure mainly in good condition • Good coverage of port network, widely serving industrial needs • Proximity of Russia • Hinterland connections that generally operate quite well 	<ul style="list-style-type: none"> • Relatively small flows of goods to current port network • Too much port capacity, inbuilt inefficiencies • Finnish ports mainly operate in two shifts – competitors are open 24/7 • Work disruptions and strikes at ports • High level of official charges (weakens competitiveness especially for transit traffic) • For transit traffic, Russia and the Baltic countries have easier ice conditions and shorter land transport distances • Lack of competition in some ports • Inadequate rail links and poor service level • Intermodal and integrated transport not well developed • Slowness of authorisation process hampers development of ports and fairways • Low investment in maritime transport infrastructure in comparison with that in other transport modes
Opportunities	Threats
<ul style="list-style-type: none"> • Development of port network and concentrating utilised traffic • Specialisation of ports • Making use of idle capacity • Improved targeting of infrastructure investment • Port automation (especially if port size can be increased) • Development of rail transport services • Increase in electronic data transfer and further development of this • Greater flexibility in cooperation between public authorities at ports • New kinds of added value services in logistics • Proximity of Russia, strengthening of Finland's position in Russian distribution • Combined transport to and from Russia • Growing amount of mine-related traffic • Growth in passenger traffic with increasing integration of Baltic countries with the EU and Finland, bringing opportunities for cargo traffic as well 	<ul style="list-style-type: none"> • Weakening of industrial competitiveness and decrease in goods flows as result of rising logistics costs • Operators are not investing in the development of their business • Unforeseeable effects of Sulphur Directive • Too much regional policy in developing the transport system, leading to inefficient solutions • Faster development of ports and transport routes in Russia and Baltic countries than in Finland • If no changes are made to fairway dues, there will be a decline in competitiveness especially in transit traffic • If transit traffic switches to other ports, this will weaken the availability of containers (exports) and will further increase costs • Restrictions in shallow fairways (vessel size increasing) • The increase in vessel sizes requires fairways to be deepened and investments to be made in ports • Rising costs of icebreaking

Table 3. Strengths, weaknesses, threats and opportunities concerning Finland's ports.²²

The European Commission presented its proposals on port policy in summer 2013. The principal goal of the proposals is to attain transparency in port financing and to reduce unhealthy competition. The aim is also that ports should operate on the market under commercial principles and on the same competitive terms. This should lead to a correct allocation of resources, i.e. an increase in capacity in ports which are suitably located for the market and which provide an appropriate service level. Concentration and specialisation should also occur on the market. Just as important as the transparency of public funding is the presence of genuine competition between and within ports. The EU's aim is in fact to lay down basic rules for ports that will allow their operations to become harmonised. The special nature of ports is also acknowledged, but the procedures must be open and non-discriminatory. The pricing of port infrastructure should correspond to the long-term investment needs and should avoid special and individual rights. Work practices, occupational safety and health issues, etc. will be dealt with in 'social dialogue' between the cargo-handling employer and the employee parties.

The objective of the EU's port policy is also to simplify administration and improve coordination between the port operators. Complex administrative arrangements are a major burden on ports and on service users.

By the end of 2014 Finland's municipal ports will become municipally owned companies. The transformation of municipal ports into limited companies will emphasise the importance of business principles in port operations. This corporatisation will have a major influence on the legal, financial and administrative arrangements of these ports. It will also increase the scope for ports to make independent decisions and improve their competitiveness. Investment opportunities by ports will also be affected, in that investment financing in future will be separated from municipal finances and will require new skills from port management.

Ports often have a special regional significance - even if the port only has a minor role in the national transport system. Functions of the State that can influence port development

²² Competitiveness and development needs in port operations. Background study on port policy (to be published in the publications series of the Ministry of Transport and Communications in spring 2014). (In Finnish)

and competition include those connected with the quality of waterways and land-based routes, the provision of icebreaking services and pilotage dues and fairway dues. As market-based operations strengthen at ports, it will no longer be appropriate to specify the future network of ports by means of State control. The port network will develop on the basis of the changing service need and the competitiveness of ports. Changes in the port network may lead to pressures to develop the road and rail infrastructure.

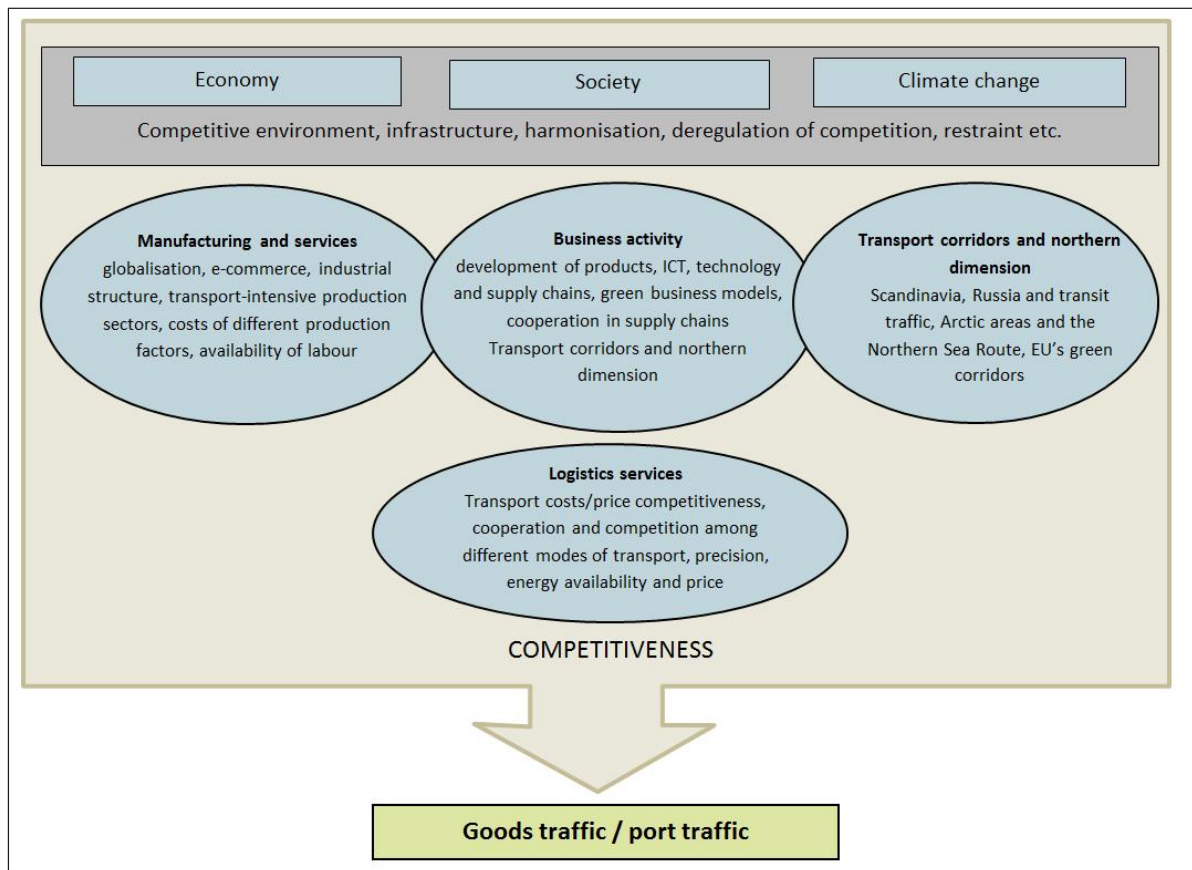


Figure 7. Factors causing changes in the operating environment of ports.²³

The efficiency of operations will be aided by the removal of overlapping functions, the free competition among service providers and smoothly operating pilotage and icebreaking services. Many Finnish ports are small, which limits the opportunities to develop the capacity and efficiency of the ports through technological solutions, for instance by automating cargo handling.

The efficiency of the ports can also be supported by reducing the administrative workload. Laborious administrative procedures include various reporting obligations related to safety and the rescue services (e.g. ISPS obligations, which are based on international obligations) and the permit procedures for port and marine fairway investments. New requirements are also on their way for ports, such as those concerning equipment for receiving waste and cargo residues, vessel traffic and data systems and environmental efficiency of vessels in port.

According to a study of the competitiveness of Finnish ports, the service level of the ports is relatively good.²⁴ This background study connected with preparation of the strategy

²³ Study of the hinterlands of Finnish ports (Sito), to be completed during 2014.

has also found that the cost level for container handling at Finnish ports is fairly competitive compared with Finland's near neighbours. In Russia, container handling costs are considerably higher, while in the Baltic countries they are at almost the same level as in Finnish ports. The Baltic's large ocean ports benefit from economies of scale and their cost level is distinctly lower than in Finland's ports. Ships visiting Finnish ports pay fairway dues, which increases the costs especially for vessels that visit infrequently. The service level at Finnish ports in terms of opening hours is clearly below that of competitor countries, where ports are mostly open 24/7.

For foreign trade it is of paramount importance that transport is not disrupted. Disruptions in ports will have a particularly strong impact on those cargo flows that can be easily routed elsewhere. Re-routings often lead to the loss of lasting customer relationships. During preparation of the Maritime Transport Strategy for Finland, businesses using maritime transport pointed out that labour market issues have a considerable influence on security of logistics and on the competitiveness of transport chains. For example, the costs of port personnel and inflexibility in the use of labour have been identified as important challenges for Finnish ports. The opportunities for ports to be competitive would be improved by port-specific flexible working hours models that could respond efficiently to customers' service needs, allowing, as necessary, 24/7 opening if this is worthwhile in cost terms. The responsibility for resolving labour market issues lies with the labour market parties in the port sector.

In future years, mines at Sokli and Kolari, and in the longer term at Sakatti, may add to transport movements via certain ports. Much of the growth in maritime transport related to mining operations is likely to affect Bothnian Bay ports. The sea transport movements of northern mines could also be routed via Norwegian ports. However, this would require major investment in land-based transport infrastructure. The mines would also import considerable amounts of raw materials, the extent varying according to the mine and the production process.

Efficiency will be created when ports and other companies offering services in the ports actively develop their service concepts according to customer needs. Comprehensive service packages and a door-to-door service approach are expected to become more common. Deepening the cooperation between port service providers and customers and more thoroughly integrating port operators into logistics chains via a new type of service provision will create the conditions for efficient services and opportunities for profitable new business.

²⁴ Competitiveness and development needs in port operations. Background study on port policy (to be published in the publications series of the Ministry of Transport and Communications in spring 2014).

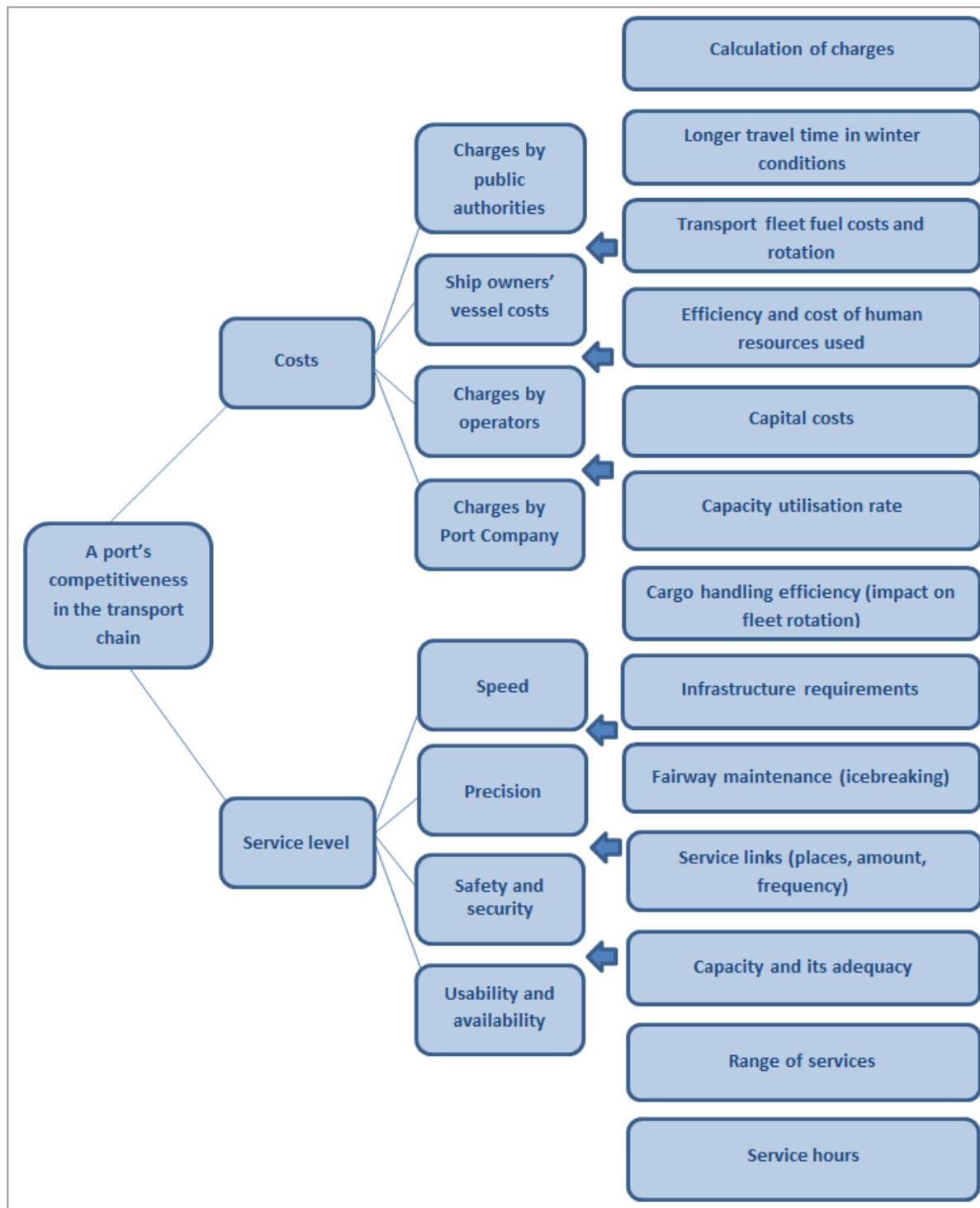


Figure 8. Competitiveness factors for ports in the transport chain.²⁵

²⁵ Competitiveness and development needs in port operations. Background study on port policy (to be published in the publications series of the Ministry of Transport and Communications in spring 2014).

3.8 Inland waterway transport

The development opportunities for Finland's inland waterway transport are principally in the Saimaa Canal and Vuoksi waterway. In other waters the development potential is mainly in passenger traffic and recreational boating. The vessel traffic using the Saimaa Canal and Vuoksi waterway is important for industrial activity in the region especially in regard to international cargoes. The potential for inland waterway transport has not yet been fully utilised, but the role of waterborne transport will be emphasised in the future as environmental requirements grow and people become more aware of environmental issues.

The Sulphur Directive, which enters into force in 2015, could be favourable for Saimaa traffic, because the vessels currently operating there already use low-sulphur fuels.

Inland waterway transport

- ✓ The Saimaa Canal and inland waterways are important for raw material transport for the forest industry, chemicals industry and construction materials industry.
- ✓ Goods traffic in the Vuoksi waterway (traffic via the Saimaa Canal, Saimaa's internal traffic and log floating on Lake Saimaa) amounted to 2.76 million tonnes in 2012.
- ✓ International cargoes in the Saimaa Canal in 2013 totalled 1.73 million tonnes.²⁶
- ✓ Passenger vessels in inland waterways carried 316,000 passengers in 2012, of which the Vuoksi waterway accounted for 161,000 passengers.

Enabling year-round navigation of the Saimaa Canal would be a key factor for encouraging inland waterway transport and movements from Saimaa to destinations in Europe. Maintenance of the canal and fairway network can be improved through small but innovative solutions that would improve their usability and reliability during the current navigability period. However, year-round navigability would require investment of approximately EUR 30 million and would also increase the canal's annual maintenance and up-keep costs (including icebreaking) by about EUR 3-4 million, which cannot be regarded as feasible in view of the current or projected traffic volumes. The future development needs should nevertheless be re-evaluated at a later stage if substantial changes occur in traffic volumes. The aim should nonetheless be to ensure that the navigability season is as long as possible.

Saimaa has no regular goods services. The existing cargo base only allows for vessels with full loads. Smaller cargoes end up going by road via sea ports. Maintenance of the Saimaa Canal is important to ensure that traffic uses it, and this also means securing the financing for the related programme of replacement investment. The cost implications of such investment are estimated at about EUR 1 million per year. Continuing the current level of winter traffic in the Saimaa waterways is also becoming a challenge due to the ageing of the icebreakers used.

The provision of pilotage services is a particular challenge in the Saimaa area as the fluctuation in demand is considerable, and the shortcomings regarding interpretation of the Act on Fairway Dues represent a further challenge. Saimaa pilotage is a relatively expensive cost component in the logistics costs for industry. New environmental provisions, for example concerning disposal of water after washing cargo holds, and any new ballast statutes will also mean investment pressures on operators in the Saimaa area. Any ballast water statute would radically limit the vessels that can operate in Saimaa traffic. The current profitability of ports does not allow any major environmental investment in port facilities and services. The new environmental requirements are based on international conventions that must be complied with by vessels in international traffic, irrespective of whether Finland has undertaken to observe the statutes. Only a very small proportion of the traffic using the Saimaa Canal is domestic – about three per cent.

²⁶ Monthly statistics on international shipping. December 2013. p. 7. Finnish Transport Agency.

The average age of vessels in inland waterways traffic is very high. Moreover, investment in new vessels is extremely difficult because of the shortened navigability period. The seasonal nature of the traffic means that the financing opportunities are very limited and there are considerable risks associated with financing investments. These problems are compounded by the relatively small passenger capacities of the vessels. There is a general lack of awareness, especially abroad, concerning Finland's waterways tourism and the possibilities it offers. Strengthening the inland waterways passenger potential will require investment in marketing and awareness rising.

3.9 Intelligent logistics chains

The pressures on logistics costs are growing and at the same time the environmental and quality requirements are increasing. There is also an ever greater emphasis on cost-efficiency, energy-efficiency, punctuality and quality. Developments in ICT and intelligent transport solutions can significantly improve the efficient use of the transport system and transport services and resolve transport-related challenges. There is still a lot of potential for improving efficiency in transport chains, for instance in optimising full outward and return loads.

The role of intelligent transport in the maritime transport sector is growing as a result of information assets being made available to different parties and the development of geographic information and navigation services and targeted intelligent content. The importance of intelligent ICT solutions and data in planning and providing logistics services and in the services provided by the authorities that support these will continue to grow. The aim in logistics is to use electronic documents throughout the entire supply chain and to see that the different parties in the chain are united by a shared system of electronic transactions. In Finland this requires the introduction of electronic documents and operating models that enable their use. As nodes for sea and land transport, ports are in a key position regarding the use of electronic systems in logistics. EU-compatible services for maritime transport are being developed in the Safe SeaNet and Single Window projects. In addition, a maritime information exchange environment that would enable cost-effective supervision of the EU's maritime sector is being considered in the CISE project (common information sharing environment).

Intelligent transport networks and services, intelligent equipment and competent operators will together make up a harmonised and coordinated sector. Real-time traffic data will provide businesses and organisations in the sector continuously with information on transport movements and on the conditions affecting these. Transport movements can be planned more accurately and if disruptions occur, the flow of information and the response to changing situations will occur more quickly. The aim is that in Finland, traffic services and control systems will be based on the world's best real-time view of the traffic situation. Intelligent transport will improve the use of fairway capacity and will enable productivity growth in the entire infrastructure sector. Cost-efficient logistics will also improve competitiveness for the country as a whole.²⁷

²⁷ Towards a new transport policy. Intelligence in transport and wisdom in mobility. Finland's second generation intelligent strategy for transport (Programmes and strategies of the Ministry of Transport and Communications 1/2013).

3.10 Development of the trans-European transport network (TEN-T) and extensive use of EU funding opportunities

The aim of the trans-European transport network (TEN-T) is to bring about smooth-functioning and sustainable transport connections for the benefit of the internal market. The new TEN-T network, effective from the start of 2014, comprises a comprehensive network and a core network. The comprehensive network consists of the fairly dense national networks of rail, road, inland waterway, port and airport connections. The core network comprises the parts of the transport network that are the most important strategically and form the backbone of the European transport network. The TEN-T policy includes 'Motorways of the Sea', which serve as the maritime dimension of the trans-European transport network. To further the implementation of the TEN-T network, a set of multimodal core network corridors has been defined as the framework for development.

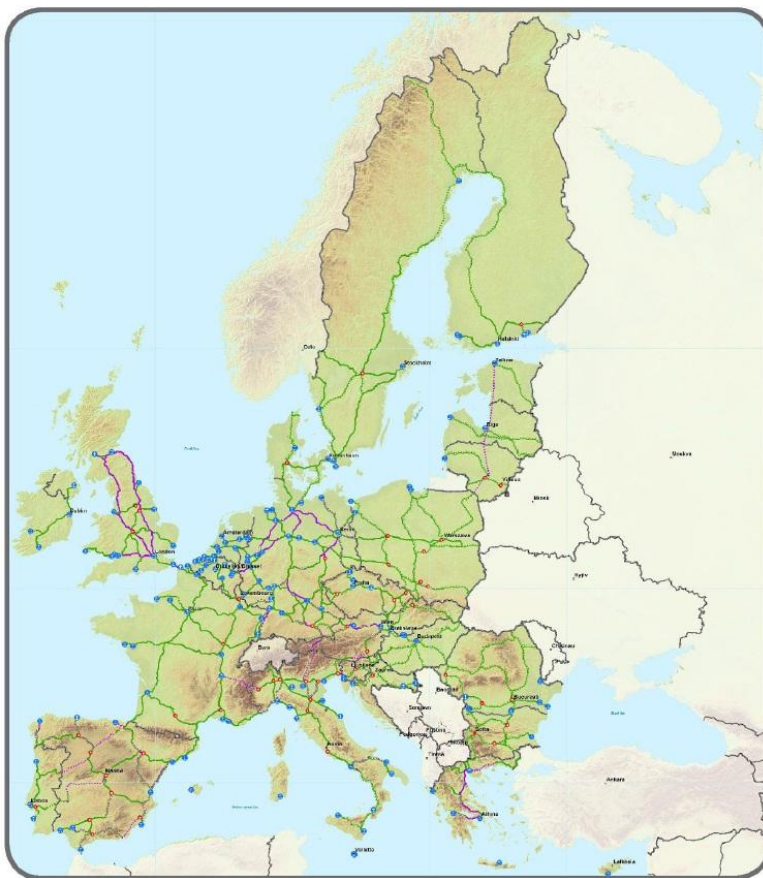


Figure 9. TEN-T core network seaports and rail links.

The comprehensive port network for Finland covers 17 ports. The core network consists of the ports of Hamina-Kotka, Helsinki, Turku and Naantali. The TEN-T programme funding has covered various projects on the environmental requirements for maritime transport, such as projects concerning sulphur scrubbers and LNG infrastructure.

The prerequisite for a TEN-T port is that it has at least one terminal open for all operators in a non-discriminatory manner and invoiced charges are determined under transparent criteria. The ports must have the necessary equipment to ensure the environmental efficiency of ships and the equipment to receive waste generated on board and cargo residues.

On 24 January 2013, the Commission issued a proposal for a Directive on the deployment of alternative fuels infrastructure, in which it proposed that LNG fuel stations should be installed at all TEN-T core network seaports by 2020 and inland ports by 2025.

The revised indicative TEN-T programme is closely linked to the connecting Europe facility (CEF), which will fund important EU investments in transport, digital and energy infrastructures during the funding period 2014–2020. The CEF replaces the previous TEN-T fund. It is possible to apply for support from the CEF for design, planning or construction projects for maritime transport and ports, as well as for other forms of transport.

The EU also has other funding and loan guarantee facilities for the transport sector. The European Investment Bank has granted loans for maritime transport projects that promote the development and deployment of clean shipping technology.

In recent years Finland has received TEN-T support for a number of maritime projects, such as the winter navigation cooperation project WINMOS, the TWINPort cooperation project of the ports of Helsinki and Tallinn, and the Kvarken Link project promoting multimodal links across the Kvarken (Quark). Finland must learn to make more effective use of the opportunities offered by the CEF and other EU funding facilities in the future. It would therefore be useful to further develop the national exchange of information and sharing of good practices. A separate group should be set up for coordinating the opportunities offered by the different funding facilities.

Action

Efficient transport chains that support competitiveness

- Transport system secured and winter problems minimised
 1. Ensure that Finland's foreign trade and domestic waterborne transport are free of disruption, are cost-efficient for the national economy and guarantee international competitiveness, also in the winter months.
 2. The contingency preparations for maritime transport and port operations will be developed further as part of a comprehensive logistics system.
- Maritime transport propelling Finland's competitiveness
 3. The fairway dues system will be developed.
 4. A network of fairways will be developed and maintained to meet the needs of maritime transport and inland navigation.
 5. Maritime cluster cooperation will be enhanced.
 6. Assess the need to update the Maritime Transport Strategy for Finland as a result of changes in the transport needs of industry.
- Versatile business models for ports
 7. The competitiveness of ports will be strengthened by providing incentives for them to develop their service functions, by improving operating preconditions through reducing the administrative load and by enabling greater logistical efficiency through enhancing the usability of information.
 8. A national service point will be developed on the basis of the existing vessel traffic data management system.
- Service level that matches needs
 9. The outmoded definition of winter ports will be discontinued.

4. Green growth from strong maritime cluster

The aim is that Finland will become a frontrunner in winter and environmental technologies for shipping and an exporter of leading expertise in maritime technologies. Finnish shipping company operations will be dynamic and competitive.

The maritime cluster employs approx. 43,500 people in Finland. The cluster consists of all sectors connected with the maritime industry, maritime transport and port operations, such as shipping companies, public sector organisations, finance and insurance sector companies, ship design, construction and offshore companies, ports and port operators. The maritime cluster comprises about 2,900 companies. The operation of the cluster also has a direct and indirect influence on the vitality of countless other sectors of the economy. The maritime industry that has emerged and developed around Finland's traditionally strong shipbuilding industry provides employment for more than 21,000 people, and in 2012 it had a turnover of EUR 5.4 billion, most of which was exports. Estimates show that taking into account the indirect effects covering the entire country, there are at least 500,000 people within the employment sphere of the maritime cluster.²⁸ The maritime industry and the entire maritime cluster therefore have a significant impact on the Finnish economy and society.

The Maritime Transport Strategy for Finland identifies the following strengths, weaknesses, threats and opportunities for sustainable maritime transport and the maritime cluster:

Strengths	Weaknesses
<ul style="list-style-type: none"> • Strong, innovative cluster • Effective, skilled and relatively small team • Flexible, high-quality work on time • Cooperation and trust • High safety and environmental standards • Environmental and winter expertise • Russia's proximity, major market 	<p>External factors</p> <ul style="list-style-type: none"> • Logistical location (maritime country, dependent on sea transport, winter conditions) • Industrial competitors closer to main markets in Central Europe <p>Internal factors</p> <ul style="list-style-type: none"> • Lack of cooperation across full logistics chain • Age of Finnish tonnage averages about 16.9 years • Lack of LNG infrastructure • Poor competitiveness of small and mid-sized shipping companies • High (production) costs
Opportunities	Threats
<ul style="list-style-type: none"> • Intensified cooperation between participants • Courage, risk-taking, flexibility and agility • Low-emission shipping operating in Baltic Sea • Maritime transport a Finnish export product • Optimisation and energy efficiency of transport chains • New transport routes • Arctic expertise • Fleet renewal using new financing and subsidy policy models and concepts • Pace of technology development (research, product development, piloting, international cooperation) • Development and deployment of alternative fuels • Strong 'brand' attracting talent to maritime transport sector • Facilitative governance • Synergies of transport and industry • National strategy and action to ensure competitiveness of maritime transport 	<p>External factors</p> <ul style="list-style-type: none"> • Climate change • Costs of ever more stringent climate and environmental regulations on shipping • Regional inequality of regulations (IMO, EU, Baltic Sea) • Decline in Finland's competitiveness as transport costs rise • Weak state of financing market and economic uncertainty • Foreign ownership of business drivers, difficult to assemble a desired vision for Finland <p>Internal factors</p> <ul style="list-style-type: none"> • Short-termism in decision-making, difficulty predicting future operating environment • Lack of common vision and operating methods • Weakened investment capability of shipping companies, poor availability and high cost of credit (due to economic uncertainty) • Fragmented, slow and inflexible administration • Lack of courage to innovate

Table 4. Strengths, weaknesses, threats and opportunities concerning sustainable maritime transport and Finland's maritime cluster.

²⁸ Operating environment, subsidy policy and adjustment measures of maritime transport. Publications of the Ministry of Finance 22/2012. (In Finnish)

Increasing environmental regulation imposes significant challenges for the Finnish maritime cluster, but at the same time it must be emphasised that the cluster has a number of key strengths. A decisive key theme emerging is the development and deployment of alternative fuels. The development of new technology and innovations should become one of Finland's new export strengths. There is particular export potential for offshore activities, activities serving Arctic business and shipping, and cleantech companies. Finnish shipyards and more broadly the Finnish maritime industry represent the best in the world when it comes to the development of green technology, improvements in energy efficiency, ships' use of alternative fuels such as LNG and bio-oil, and hydrodynamics. Potential business partners in the maritime cluster's activities include Norway and Russia. Interest in business focusing on China is also growing.



Figure 10. LNG-powered Viking Grace in winter 2013.

When the sulphur emission limits come into force, vessels can adapt to the requirements by using low-sulphur (0.1%) fuel (in practice, diesel), liquefied natural gas (LNG) or bio-fuels, or heavy fuel combined with a sulphur scrubber. In practice, the use of LNG will be realistic mainly for new vessels, as the conversion of existing ships to LNG use is not yet cost-effective. It is expected that LNG will be used initially in scheduled service traffic. The use of LNG will require urgent action to ensure the availability of LNG at ports.

The fuel can be supplied from fixed terminals, refuelling barges or fuel tanker vehicles. Standardised biofuels for shipping are not yet in commercial production. Sulphur scrubbers have been fitted in some ships, but there is still relatively little experience of this technology, e.g. the reliability of scrubbers.

The aim is that Finland's maritime industry will become a frontrunner globally in the design and construction of LNG-driven ships and a frontrunner and model environment for LNG use in the Baltic. A specific example is the LNG-powered passenger ship Viking Grace, which was recently built in Finland and has attracted a lot of attention globally. A new vessel for the Finnish Border Guard is also to have a dual-fuel engine that can be used with LNG. In addition, the Finnish Transport Agency's new icebreaker will be fitted for LNG use. Good examples of Finnish green technology concepts include the following: an exhaust gas scrubber for scrubbing sulphur from high-sulphur fuels, developed and tested by Hans Lång Oy with support from the Finnish Funding Agency for Innovation (Tekes) and elsewhere, and Meriaura's biofuel project. Finnish technological expertise and a frontrunner role will also ensure a significantly advantageous position at the stage when the EU's Sulphur Directive provisions on a 0.5% sulphur content limit become effective in 2020 within the EU (outside the sulphur emission control areas (SECAs), and when the IMO's 0.5% sulphur content regulations enter into force internationally.²⁹

The Ministry of Employment and the Economy's working group considering ways to improve the competitiveness of the maritime industry and the modernisation of the sector

²⁹ The rules will come into force internationally in 2020 or 2025, the decision on this being made by the IMO in 2018.

submitted its report on 17 June 2013.³⁰ The recommendations included the need to strengthen expertise and the sector's image and appeal, manage the opportunities for modernising the stock of ships, improve the marketing of exports and highlight Finland's strong Arctic expertise much more. The working group proposed the launch of a comprehensive development programme that would include a wide range of measures concerning research, technology, business models (with Tekes funding) and development of the operating environment (with funding from the Ministry of Employment and the Economy).

On this basis the Ministry of Employment and the Economy launched a maritime industry operating environment development programme³¹ in December 2013, the main aim of which is to enhance the competitiveness of the maritime industry, to ensure it is modernised on a sound economic basis and to retain top-level expertise in Finland. In exports, the aim is a Finnish maritime industry that is actively evolving and attracting a wider client base than at present, making it less susceptible to cyclical fluctuations in the economy. The programme also seeks to promote collaboration between businesses and research institutions, to position Finnish networks in global value chains, to develop new business and revenue models for maritime industry operators and their networks, and to promote Finland as a centre of maritime industry expertise. A further goal is to identify new products, services and markets and areas in which expertise can be further developed.

In December 2013, Tekes launched a programme entitled Arctic Seas.³² The programme aims at encouraging the creation of new business activities focusing on eco-efficient maritime solutions and sustainable utilisation of natural resources in marine environments. Key business areas include environmental technology, Arctic and other maritime transport, the offshore industry, the maritime industry and new business based on Arctic know-how. The programmes of the Ministry of Employment and the Economy and Tekes have been jointly built into a concise package aimed at broad-based development of the maritime industry.³³

The programmes will also be used to implement Finland's strategic policies on the Arctic that were approved in August 2013.³⁴ The Strategy for the Arctic Region also considered maritime transport and concluded in particular that Finland has a strong national interest in becoming one of the world's leaders in training, research and product development in maritime technologies and maritime transport, and in operations and business activities in these areas.

Key themes for research and development on ships and navigation include research and innovation in the energy efficiency of vessels, alternative fuels and emission reduction technologies, and turning innovations into practical propositions and thus examples of expertise in the sector. Efforts should also be made to improve the efficiency of the entire transport chain. Achieving this aim will require closer cooperation between participants in the maritime transport sector and between the sector, research institutions and government authorities. In addition, collaborative solutions should also be sought with other international entities.

³⁰ Working group on maritime industry competitiveness 2020, 17 June 2013

http://www.tem.fi/files/36946/Meriteollisuus_2020_Mietinto.pdf

³¹ Decision of the Ministry of Employment and the Economy: Development programme and development assistance for maritime industry operating environment 2014–2016.

http://www.tem.fi/files/38404/Paatos_Meriteollisuuden_toimintaympariston_kehittamisohjelma_20122013.pdf

³² <http://www.tekes.fi/ohjelmat-ja-palvelut/ohjelmat-ja-verkostot/merien-uudistuva-liiketoiminta/> 8 January 2014

³³ Decision of the Ministry of Employment and the Economy: Development programme and development assistance for the maritime industry operating environment 2014–2016.

³⁴ Finland's Strategy for the Arctic Region 2013. Government resolution on 23 August 2013. Summary.

In spring 2013, a study on future propulsion systems for transport³⁵ was prepared by the Ministry of Transport and Communications, and this included examination of future fuel use in sea transport. The study concluded that in the future ships will use the following energy sources: heavy fuels combined with abatement technology (such as sulphur scrubbers and catalytic converters), liquefied natural gas (LNG) and bio-oil, and in the longer term also hydrogen, solar, wind, etc. In association with the study a short-term action plan³⁶ was drawn up for accelerating the deployment of LNG especially in Baltic shipping and in short sea shipping within the EU. Cooperation will also be important in promoting the use of LNG, particularly within the HELCOM framework and with other players in the Baltic region.

4.1 Future outlook and challenges for the shipping company sector

Finnish maritime transport consists principally of short sea shipping between ports in Finland and mainland Europe. Promoting short sea shipping is an important element of the EU's transport policy. Finland has participated actively in the EU's action to promote short sea shipping, and it also has a Shortsea Promotion Centre (SPC Finland), which is part of the EU's European Shortsea Network.

According to a shipping company barometer study carried out by SPC Finland in 2013, the economic situation on the maritime transport market showed a slight improvement over the preceding 12-month period. The economic indicator used is still negative, but the future outlook has finally moved in a more favourable direction. The balance indicator for transport demand has already begun to rise gently.³⁷ The future outlook for shipping companies has become more favourable, their capacity utilisation rate has improved significantly during the current review period, and the positive trend is forecast to continue. The most significant obstacle to the growth and development of Finland's shipping companies is the general economic uncertainty, though the companies are also affected by the global overcapacity and indebtedness.³⁸ Survey respondents noted that competition in the maritime transport market has intensified. Those succeeding most effectively in this competitive environment are highly specialised companies that focus on technological advances. In 2012, Finnish ships accounted for 19% of Finland's export tonnage and 41% of its import tonnage.³⁹

An essential factor for the future operation of the Finnish shipping company sector is to ensure that the conditions for operating under the Finnish flag are internationally competitive within the EU's permitted framework of guidelines for State aid to maritime transport. A report⁴⁰ commissioned by the Shipowners' Foundation in Finland also acknowledges the following factors affecting operations in the shipping company sector:

³⁵ Alternative propulsion for the transport of the future. Publications of the Ministry of Transport and Communications 15/2013. (In Finnish)

³⁶ LNG action plan for shipping 2013–2017.

³⁷ Shipping company barometer study 2013. (In Finnish)

<http://www.utu.fi/fi/yksikot/mkk/ajankohtaista/uutiset/Sivut/Varustamobarometri-2013-my%C3%B6nteinen-suhdanne%C3%A4%C3%A4nne-n%C3%A4kyviss%C3%A4-.aspx>

³⁸ Fairway to the future. The future of shipping in Finland 2015 and beyond (The Shipowners' Foundation in Finland, 2013).

³⁹ Statistics on international shipping 2012. Statistics from the Finnish Transport Agency 7/2013.

⁴⁰ Fairway to the future. The future of shipping in Finland 2015 and beyond (The Shipowners' Foundation in Finland, 2013).

Strengths	Weaknesses
<ul style="list-style-type: none"> • Ice-strengthened fleet • Skilled personnel • Small-tonnage vessels • Reliability • Local knowledge 	<ul style="list-style-type: none"> • Ageing fleet • High personnel costs • Small players, insufficient cooperation • Dependence on Finland's export industry / on small group of customers • Lack of integration into customers' value chains
Opportunities	Threats
<ul style="list-style-type: none"> • Sulphur Directive, protected market • LNG solutions and infrastructure • Growing markets, especially Russia • Tonnage tax • Growth of mining industry and biofuel exports • Joint effort to develop intelligent solutions • Containerisation of raw materials – multipurpose vessels 	<ul style="list-style-type: none"> • Sulphur Directive, rising fuel costs, transfer of production plants away from Finland • Russia's port investments will reduce transit traffic and need for feeder traffic • Increasing containerisation • Increasingly difficult to obtain finance • Export volumes shrinking (e.g. paper) • Inefficient ports and strikes

Table 5. Strengths, weaknesses, threats and opportunities concerning Finland's shipping company sector.⁴¹

Finnish shipping companies compete in the international market particularly with other EU-flagged vessels. Maritime transport operates in an internationally competitive environment in which freight charges are largely determined by vessels operating under low-cost flags. In the 1980s, Europe's shipping began increasingly to encounter tough competition from ships of lower cost flag States. This led all the so-called high cost countries to adopt various subsidy measures to prevent flagging out. Since 1997, the EU has applied the Commission-approved guidelines on State aid to maritime transport, the aim of which has been to retain the competitiveness of the EU countries' tonnage in relation to the global competition and at the same time to retain Europe's expertise in the maritime transport sector and the maritime cluster and secure European seafarer jobs. The guidelines were last renewed in 2004⁴², and in 2012 the Commission's DG Competition began the required review of the guidelines. It currently appears that no changes are to be made to the guidelines. The guidelines on environmental support for maritime transport are currently being renewed.

The EU's guidelines on State aid are intended to minimise the adverse competition impact of aid, guarantee equal operating conditions between different Member States, and prevent Member States competing with each other over subsidies. The main State aid measures concern vessel operating costs, i.e. taxation and a reduction in indirect labour costs. In addition, State aid can be given for costs of changing vessel crews, relevant training, structural reforms and implementation of public service obligations and agreements. Loans at below market rates, guarantees, rents and direct subsidies to companies also constitute State aid. Under the guidelines the total amount of State aid for maritime transport must not exceed the total of taxes and social insurance contributions collected from vessel traffic and seafarers. In Finland, State aid for maritime transport includes a reduced level of social security payments for seafarers, tonnage taxation, subsidies for crew travel and replacement costs, and investment, regional and restructuring subsidies that improve environmental protection, and training allowances.

In 2012, the amount of Finnish State aid granted to shipping companies totalled EUR 86.4 million for reducing crewing costs and EUR 2 million for various seafarer services. The State's contribution to pension expenditure in the Seafarer's Pension Fund was EUR

⁴¹ Fairway to the future. The future of shipping in Finland 2015 and beyond (The Shipowners' Foundation in Finland, 2013).

⁴² The conditions for aid granted to shipping companies are specified in the Commission Communication on Community guidelines on State aid to maritime transport (2004/C13/03), approved in 2004.

54.5 million. In addition, a total of EUR 4.2 million was granted in subsidies for pilotage dues for Saimaa inland waterway traffic.⁴³ In shipbuilding, State aid of EUR 30 million was granted for new-build ships in 2012. In 2013, the Budget included authority to grant EUR 30 million in environmental state aid for repairs of ships in service, of which approximately EUR 20 million has been granted so far. In the same year, a total of EUR 38.9 million was granted to shipyards in the form of State aid for innovation in the shipbuilding industry. The corresponding sum in 2011 was EUR 14.9 million, of which the passenger ship Viking Grace accounted for EUR 11.3 million. No innovation support was granted at all in 2012.

Finland's Tonnage Tax Act was amended on 1 March 2012 to focus on greater competitiveness. Tonnage taxation has become a standard form of shipping company taxation in EU Member States. It is applied in 16 Member States, including key competitor countries for Finland, namely Denmark, Germany, the Netherlands and the United Kingdom.⁴⁴ It is estimated that the Tonnage Tax Act reduces taxation for cargo vessels from EUR 10–30 million to about EUR 0.5 million.⁴⁵ In 2009, agreement was reached among the labour market organisations in the maritime transport sector on the mixed-nationality crewing of vessels. According to estimates, mixed-nationality crewing should enable a ship's payroll costs to be reduced by 20% to 30%. The amendment of the Tonnage Tax Act in particular and the signing of mixed-crewing agreements for cargo ships have brought more vessels under the Finnish flag in conjunction with new-build registrations and re-flagging of existing vessels. These measures have allowed the creation of additional Finnish seafarer jobs.

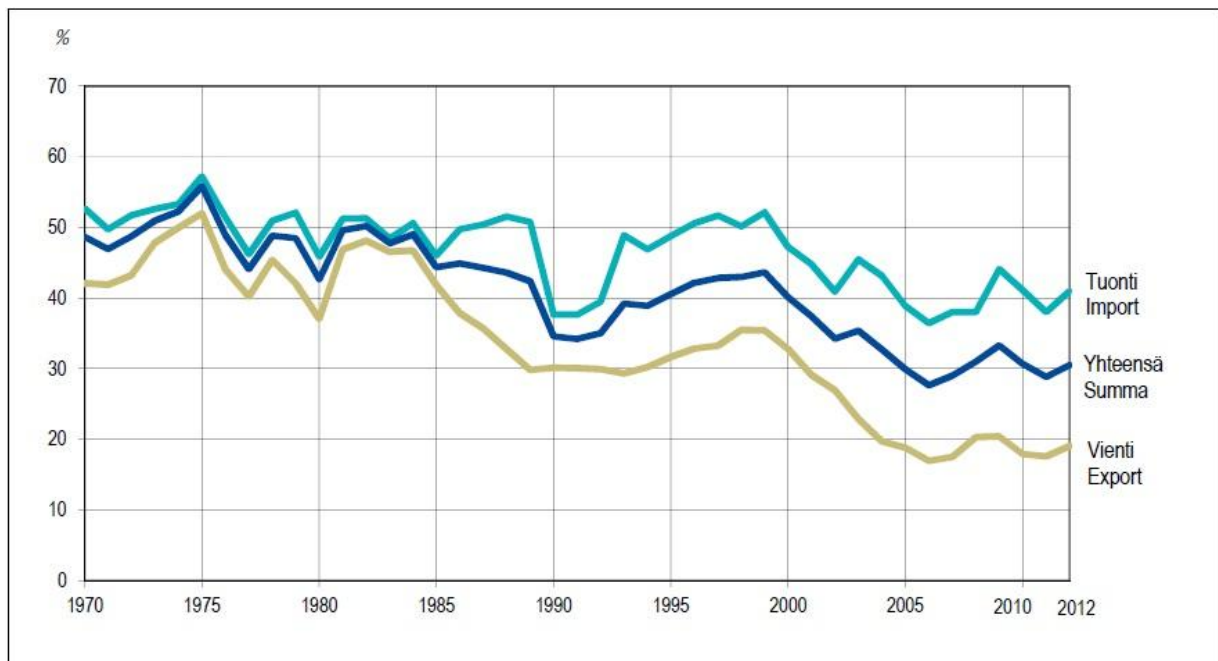


Figure 11. Finnish ships as a percentage of international maritime transport using Finnish ports, 1970–2012.⁴⁶

⁴³ Operating environment for the maritime transport sector, the sector's competitiveness and public finance adjustment measures. Background study for the Ministry of Finance (Etlätieto publication 1270). (In Finnish)

⁴⁴ Maritime transport sector: operating environment, subsidy policy and adjustment measures. Publication of the Ministry of Finance 22/2012. (In Finnish)

⁴⁵ Operating environment for the maritime transport sector, the sector's competitiveness and public finance adjustment measures. Background study for the Ministry of Finance (Etlätieto publication 1270). (In Finnish)

⁴⁶ Statistics on international shipping 2012. Statistics from the Finnish Transport Agency 7/2013.

According to the Finnish Shipowners' Association, 19 cargo ships have come under the Finnish flag since 2011. These ships have had a total of 151 positions for Finnish seafarers, and based on the rotation system they employ about 300 Finnish seafarers. Mixed-nationality crewing agreements have also been negotiated for 11 cargo vessels that were at risk of being flagged out, thus securing 54 positions and consequently about 100 jobs for Finnish seafarers. In addition, over the past two years the tonnage tax has meant that 7 ropax vessels and one bulk carrier have been transferred from the Swedish to the Finnish flag. Mixed-nationality crewing agreements cannot be made for such vessels.

Equal competitive conditions with comparable EU countries for tonnage under the Finnish flag must be secured in the future, too, within the framework of EU provisions. When deciding on measures to take, attention must be given to the security of supply, the need for a sufficient Finnish-flagged ice-strengthened fleet, the advancement of employment opportunities for Finnish seafarers, the need to reinforce Finland's maritime cluster, and safety and environmental considerations.

As Finland's State aid to maritime transport is already near the maximum permitted in the EU State aid guidelines, all available means must be considered for improving the conditions in which the shipping companies can engage in profitable business. Improvements in the profitability of shipping company operations should be sought through renewing business models, bringing greater diversity and by raising capacity utilisation rates. The cost-efficiency of logistics can be improved by developing the entire value chain. Integration of shipping companies with customer businesses should be developed and consolidated, and new forms of activity enabled. Consideration should also be given especially to more robust shipping pool arrangements for customers and shipping companies based on longer term cooperation.

When the Finnish fleet is renewed, a standardised ship design with uniform key features but modifiable dimensions could be offered in certain situations as a way of improving efficiency. Standardisation and harmonisation would give greater scope for serial production of vessels, which would in turn enable lower production costs and thus lower total prices for vessels.

4.2 Improving the financing possibilities for ship investments

The increase in environmental regulations in the next few years will lead to a considerable investment need by shipping companies concerning new, more energy-efficient, low-emission ships, installation of abatement technology in existing vessels or conversion of existing vessels. However, the investment opportunities will be hampered by the considerable deterioration in the availability of finance due to the global financial crisis, the tough competition on the cargo market and the weak economic position of shipping companies. Obtaining loans from commercial banks has been extremely difficult in recent years as a result of e.g. the oversupply of ships and the risks associated with this.

During preparation of the Maritime Transport Strategy for Finland there clearly emerged a need to investigate how the management of finance-related risks can be developed through new kinds of arrangements. This could also encompass Nordic and EU financial institutions, such as the European Investment Bank (EIB) and the Nordic Investment Bank (NIB). The preparation work on the strategy also included an examination of the means by which the State could facilitate Finnish shipping companies to obtain finance for ship investments that could be used to meet the ever more stringent environmental regulations on maritime transport. Such investment would also mean work commissioned from Finnish maritime industry businesses, and thus jobs, and would at the same time support the development of technology, enhancing the opportunities for these businesses on the global market as well.

In questions of finance and subsidy there is always a national and an international perspective linked to the EU's State aid guidelines and the limits imposed, and the procedures agreed within the OECD framework must also be followed.

Finland's official export guarantee institution, Finnvera, can grant a ship guarantee in the form of security on a loan to a Finnish shipping company or Finnish company engaged in shipbuilding. Guarantees are provided for projects assessed as being commercially viable that further the operating potential for Finnish shipping companies and shipyards and Finnish foreign trade. A guarantee can be granted irrespective of the size or ownership arrangements of the company. A ship guarantee may be applied for in the case of either repair or new-build projects. In respect of loan guarantees, Finnvera was involved in enabling finance for the passenger ship Viking Grace, for example. Previously, the demand for guarantees was fairly limited and so far all the projects that Finnvera has been involved in have been new-build projects.

Finnvera conducts its own risk analysis of each project, for which it assesses the shipping company's eligibility for finance and the returns on the project. For projects receiving a guarantee there must be a sufficient Finnish interest. A State guarantee can also be sought for vessels to be acquired from abroad if the project has a sufficient Finnish-based component, regarding for instance the proportion of Finnish crew members or Finnish investment in the vessel. The loan conditions are based on the OECD limits and on EU State aid provisions, according to which the aid may be no more than 80 per cent of the purchase price and the ship guarantee no more than 80 per cent of the amount of the loan.

A guarantee requires that the actual finance is arranged, which can be achieved in part via the EIB or the NIB, for example. Both banks grant partial loans for projects that advance the policy objectives guiding the operations of the financial institution in question. Clean maritime transport projects belong within the scope of these policy objectives. Loans are granted on commercial terms but the advantage lies in the long term nature of the loan.

The EIB's loans can cover up to half of the costs incurred in, for example, investing in a new ship or converting an existing ship. The EIB has two loan instruments: direct loans and indirect or intermediate lending. Direct project loans are for major projects exceeding EUR 25 million, while intermediate lending is intended for smaller projects of less than EUR 25 million and is arranged via national or regional financial institutions. In intermediate lending, the EIB has no direct contractual relationship with the loan recipient. Instead, the lending is arranged by a financial institution acting as intermediary.⁴⁷

Financing opportunities could be improved by creating new consortia of different parties, within the framework of which these parties would more easily be able to obtain finance under common conditions for necessary investments. By combining separate projects it would be possible to reach the minimum level for obtaining an EIB direct loan.

The EIB also has other innovative finance instruments such as loan guarantee instruments for TEN-T projects (LGTT) and the finance opportunities in the pilot phase of the Europe 2020 Project Bond Initiative.

The Nordic Investment Bank (NIB) is an international financial institution owned by Denmark, Estonia, Finland, Iceland, Latvia, Lithuania, Norway and Sweden. It offers long-term loans and guarantees for both private and public sector clients in its member countries and elsewhere. The NIB finances projects that improve competitiveness and the

⁴⁷ Financing for clean shipping investments. The Baltic Institute of Finland and the Finnish Transport Safety Agency, p. 4; <http://www.trafi.fi/en/sustainableshipping>.

environment. Its operations focus on four key areas: energy; environment; transport, logistics and communications; and innovations. The NIB assesses all the projects it finances in terms of sustainable development, giving particular attention to the projects' direct and indirect effects on competitiveness and the environment. Corporate loans are the NIB's most common form of financing.⁴⁸

One of the aims of supporting investment in maritime transport should also be to encourage and support the start-up of pilot projects. An example of this is the Arctic Seas programme launched by the Finnish Funding Agency for Innovation (Tekes). The programme supports projects that make use of competence in the maritime industry and Arctic know-how. The programme aims at encouraging the creation of new business activities focusing on eco-efficient maritime solutions, environmental technology, Arctic and other maritime transport, sustainable utilisation of natural resources in marine environments and furthering the use of ICT. The Arctic Seas programme is also associated with the operating environment development programme, which focuses on small and medium-sized businesses in the maritime cluster. In addition to the Arctic Seas programme, support for maritime cluster pilot projects should be encouraged through various programmes in order to generate innovative business ideas.

⁴⁸ Financing for clean shipping investments. The Baltic Institute of Finland and the Finnish Transport Safety Agency, pp. 6 and 15.

5. Finland - leading expert on sea and ice

The aim is to ensure there are sufficient numbers of experts in maritime transport and the maritime cluster, and to develop awareness of the maritime transport sector and its image and appeal.

5.1 Maritime transport sector training

The training system and its content are regarded as one of the principal pillars of the entire Finnish maritime cluster and essential for seafarer competence. As well as qualifying for seafarer occupations, it is possible to train for employment in port operations, shipbuilding and certain areas of the maritime industry. Maritime transport sector training can also lead to employment with public authorities and the training, education and research fields.⁴⁹ Many of those studying at polytechnics have the ultimate goal of a job ashore.

High-quality seafarer training is a prerequisite for safe and environmentally friendly maritime transport. A high-quality maritime transport sector with a high level of wellbeing among the personnel is a basic requirement for achieving profitable shipping company operations. On the maritime transport sector labour market, competition for skilled labour has been intensifying all the time. The challenges of labour availability and expertise and the changes occurring in these are naturally reflected across the entire sector. The skills and qualifications of crews also play a key role particularly in furthering maritime safety and minimising the consequences of accidents.

International regulations regarding training and competence issues in maritime transport form the basis of the training system. The STCW Convention is an IMO-approved international convention on standards of training, certification and watchkeeping for seafarers, and seafarer training must comply with the Convention's minimum requirements. The Certificates of Competency and Certificates of Proficiency under the STCW Convention enable seafarers to work on vessels of countries that have ratified the Convention. In Finland, the Finnish Transport Safety Agency issues the internationally recognised Certificates.

Today, the structure of training in the maritime sector in Finland consists of vocational upper secondary qualifications taken at vocational institutions and polytechnic degrees taken at polytechnics. Each year there are more than 1,600 students studying for maritime transport sector qualifications at either secondary education institutions or polytechnics. To obtain an Electro-technical Officer's Certificate of Competency the training required can also be taken as a specialist vocational qualification for Electro-technical Officers. Maritime sector training is also given to those who carry out their military service in the navy. The maritime transport sector no longer includes any apprenticeship training.

Responsibilities for training are determined in the operating licences of polytechnics, which are granted by the Government. The polytechnics draw up their curricula themselves. In vocational training the Finnish National Board of Education determines the national core curricula on the basis of which the training providers then draw up their own curricula. The national core curricula must be complied with even if the vocational qualifications are arranged as competence-based qualifications.

The number of applicants for maritime transport sector training in Finland has been falling, and the challenges for the sector have included the high proportion of students fail-

⁴⁹ Anticipating qualitative training needs in the maritime transport sector, p. 13. (In Finnish)

ing to complete the qualification. Applications for maritime occupations have fallen worldwide, and there is already a shortage of engine officers in particular. Finnish seafarer statistics show that the number of seafarers on board vessels on 31 December 2012 was 2,930, of whom 791 were women.⁵⁰ This number has fallen steadily since 2000, when the number of seafarers on board vessels at the end of the year was 3,537. The number of people in seafarer occupations has fallen in the period 2000–2012. In 2000, the total was 11,758, whereas by 2012 it had fallen to 9,469.

The popularity of maritime transport vocational training in particular among the young is quite low nowadays. The number of applications is affected especially by the sector's image, the level of salaries and career prospects. The sector's overall image has been somewhat in decline in recent years due to the general uncertainty in the sector, the level of flagging out, the lower salaries of foreign seafarers and other factors such as accidents and piracy.⁵¹ On the other hand, the studies themselves and the marketing for them have not always offered a sufficiently realistic picture of employment in the sector. To make sure students complete their studies and, in particular, to ensure a smooth transfer to traditional maritime occupations, it is important that students should already have a good understanding of working life in different maritime occupations when they apply for work.⁵²

Comprehensive reports^{53,54} have been produced on competence and training in the maritime transport sector, and these have been used to identify the challenges and opportunities in these areas. On the basis of the reports it appears that maritime transport training lacks a unified strategy and approach. The current training structure does not fully meet the wishes of those in charge of training or the wishes of the students, the labour market organisations or the shipping companies. A comparison of the curricula currently offered by the polytechnics is difficult to make and the study modules vary considerably in their extent and content.⁵⁵ In practice, this means that the curricula and thus the modules on the maritime transport sector differ from each other among the various education establishments and training units.⁵⁶ Deficiencies have been observed in the cooperation over training provision and in the interaction between education establishments and shipping companies. Furthermore, the level of international cooperation has been insufficient, despite the international nature of the sector. A key aim should be that competent maritime transport sector personnel should be gaining qualifications sufficiently quickly at both the commanding officer and rating level, which would benefit not only students but the whole business sector.

The lack of higher degrees among the range of maritime transport qualifications, especially for sea captains, is also viewed as problem, not only for the sector's image but also in terms of the need to meet qualification requirements for certain jobs and posts.⁵⁷ On the more technical side, it is possible to follow a path to a Master of Science degree in Technology, and so the opportunity to make progress in training is not as great a problem for engine officers as for sea captains.⁵⁸ The Polytechnic Maters's degree in maritime

⁵⁰ Seafarer statistics 2012. Finnish Transport Safety Agency publications 8/2013.

⁵¹ The present state and development needs of maritime training and education, p. 105 (In Finnish), and Anticipating qualitative training needs in the maritime transport sector, p. 43. (In Finnish)

⁵² E.g. maritime transport strategy opening event on education, training, expertise and employment, 14 Sep. 2012.

⁵³ Anticipating qualitative training needs in the maritime transport sector. Kirsi Uola. Finnish National Board of Education, Satakunta University of Applied Sciences. Reports, Series B, 3/2012. (In Finnish)

⁵⁴ The present state and development needs of maritime training and education. Riku Anttila & Tapani Salmenhaara. Finnish National Board of Education. Reports and studies 2011:5. (In Finnish)

⁵⁵ Anticipating qualitative training needs in the maritime transport sector, p. 53. (In Finnish)

⁵⁶ The present state and development needs of maritime training and education, p.45. (In Finnish)

⁵⁷ Anticipating qualitative training needs in the maritime transport sector, p. 58. (In Finnish)

⁵⁸ Anticipating qualitative training needs in the maritime transport sector, p. 59. (In Finnish)

administration, available since 2007, nevertheless provides the competence for public sector posts and duties for which a higher degree is required.⁵⁹

In conjunction with the preparation of the Maritime Transport Strategy for Finland, the strengths and challenges of training and competence in the maritime transport sector have been analysed so that the strategic measures can address them. In order to ensure the retention of expertise and continuous development both at sea and in administrative functions ashore and maritime cluster operations, it is essential to forecast the need for future expertise and the amount of qualified personnel required.

Strengths	Weaknesses
<ul style="list-style-type: none"> • Good reputation of Finnish education and training and Finnish employees (solid foundation for basic skills; quality of education and training system in general) • Special nature of sector (compact, strong cluster, opportunities for collaboration, brand, in-built international approach) 	<ul style="list-style-type: none"> • Lack of common approach (objectives too divergent and conflicting in different sectors, fragmentation, no shared strategy)
Opportunities	Threats
<ul style="list-style-type: none"> • Broad-based cooperation (involving training establishments, public authorities, businesses, PPP, especially national but also international cooperation and cooperation with neighbours) • Development of expertise (diversity of expertise to meet future needs; export and marketing of expertise) 	<ul style="list-style-type: none"> • Disappearance of expertise from Finland (shortage of skilled workers and teachers/instructors; decline in winter know-how; loss of momentum in sector) • Small size of sector (absence of critical mass; deterioration in quality)

Table 6. Strengths, weaknesses, threats and opportunities (SWOT) concerning training and expertise in Finland's maritime transport sector.

It is important to retain maritime transport expertise in Finland and especially to ensure that young employees in the sector can make a smooth transition to working life. However, this is threatened by the potential loss of maritime transport experts from Finland in the future and by the loss of skills and know-how. Strong national competence is also essential from the perspective of the security of supply. The challenges regarding the competitiveness of Finnish industry must also be given sufficient attention when confirming training and competence arrangements.

An STCW Training Committee was set up in Finland in spring 2012, the Committee members being representatives from different training units and education establishments. The Committee was set up to improve cooperation and to develop and harmonise STCW training and the interpretation of the STCW training content. The Committee's operation and the cooperation between participants has begun very well and it should be continued and developed further.

5.2 Maritime transport training system to be developed and intensified

The maritime transport sector is a specialist sector whose characteristic features and key position should be recognised when developing the training provision and study courses. Maritime transport sector training needs stronger centres of expertise and a lot closer and more extensive cooperation between training providers, for instance in the more effective use of resources. Cooperation and efficient coordination will allow significant fi-

⁵⁹ Anticipating qualitative training needs in the maritime transport sector, p. 59. (In Finnish) NB. see Centre for Maritime Studies: Need for development of national higher education degrees for seafarers (2005). (In Finnish)

nancial savings to be achieved. The role of the maritime transport sector as a field in its own right should be strengthened in the current training system and a set of convergent goals should be established, for instance regarding curricula. The profile of training for the maritime transport sector must be raised and its role in the overall training and education system reinforced.

In the future it will be important to predict more accurately the general training need and the need for experts in different maritime transport occupations, taking careful account of the needs of the sector and its employers. Maintaining and improving expertise is a process that must be assessed and developed, with particular reference to the maritime safety culture and new environmental requirements. Training should also serve the competence needs of the maritime cluster, which require the standards achievable through a Polytechnic Master's degree. Regarding future competence needs, there will be an emphasis especially on knowledge and skills in ICT and environmental technology and in electrical technology.

Attention should also be given to ensuring that the teaching available is of an even standard nationally. National centralised control, uniform curricula and effective quality control would improve the efficient use of teaching resources and enhance networking in the sector. Joint use of resources could also advance the prospects of securing a top-grade simulator and a training ship, for example. Within the maritime cluster as a whole there is a need for closer cooperation in obtaining a skilled workforce.

Guided onboard training must be included in the qualifications taken at least in respect of what is required by the STCW Convention, the Directive on the minimum level of training of seafarers (2008/106/EC, recast) and the Government Decree on the Manning of Ships and Certification of Seafarers (166/2013). The inclusion of guided onboard training in qualifications shall be sought via the ongoing process for developing the vocational training qualifications system and through legislative amendments. This would also encourage the achievement of professional competence as studies progress and would support the chances of obtaining employment immediately after completing the qualification in question.

Since onboard training is an essential component of maritime transport sector training, the availability of such placements should be ensured. Students have felt that the difficulty in obtaining an onboard training placement is the biggest problem faced in their studies.^{60,61} Finland does not operate an officer cadet training system, although students and the labour market organisations believe this would be of benefit to their practical training and career progression.⁶² The Finnish Shipowners' Association has endeavoured to improve the availability of the onboard training places by concentrating the applications for such places in the so called "TrainingMill" (HarjoitteluMylly) system. The total number of onboard training placements available with member companies of the Association is approximately 140.⁶³

The STCW training committee has proposed that State aid for maritime transport should include an obligation to provide onboard training placements on Finnish-flagged vessels, as is the case in Sweden, for example. The Finnish Shipowners' Association has pointed to the present "TrainingMill" system which the Association has been running together with the education establishments and proposed that the provision of onboard training placements should continue to be on a voluntary basis.

⁶⁰ The present state and development needs of maritime training and education, pp. 70–71. (In Finnish)

⁶¹ Anticipating qualitative training needs in the maritime transport sector, p. 65. (In Finnish)

⁶² Anticipating qualitative training needs in the maritime transport sector, pp. 61 and 66. (In Finnish)

⁶³ Finnish Shipowners' Association presentation at starting event 14 Sep. 2012.

Ensuring the opportunities for onboard training and securing the ability to study on the job are in the common interests of the training organisers, shipping companies and, where necessary, the labour market organisations, and commitment is required from these different actors. At the same time this ensures that students become qualified for the jobs in question and can successfully move to working life. It is also important for training-related in-service learning and smooth transition to employment that there are sufficient ships under the Finnish flag.⁶⁴

In addition to basic training in the maritime transport sector, consideration should also be given to the need to develop further training opportunities for seafarers and a range of career paths in the sector. The development of vocational training and qualifications in maritime transport must take advantage of the forthcoming changes in the funding of vocational education, which will allow greater flexibility in taking qualifications and components of courses in order to acquire wide-ranging skills to match future needs.

The lack of higher degrees is also viewed as a problem, not only for the sector's image and appeal but also in terms of meeting the qualification requirements for certain jobs and posts.⁶⁵ Many of the jobs ashore require persons with maritime transport qualifications and experience to obtain further training either by studying for a qualification or in the form of continuous professional development.

The maritime transport sector and occupations in the maritime cluster must be described realistically in student recruitment material and by broadly highlighting the various career progression opportunities, so that the training can more successfully attract those most suited to the sector and most interested in it. Those who perform their military service in the navy, for example, will already have knowledge and skills that can be recognised and acknowledged in training undertaken within the administrative branch of the Ministry of Education and Culture. The working group set up to investigate the impact of military service on Finnish society has proposed that military service be integrated with a lifelong learning system in which the skills gained as a conscript are credited as much as possible in civilian studies and in working life.⁶⁶

5.3 Maintaining and developing the level of expertise in Arctic navigation

The Arctic region is currently the focus of major hopes and pressures concerning the growing opportunities for commercial activity and also climate issues and environmental protection. Arctic shipping is forecast to grow as business activities increase in northern regions. Finland has long traditions and considerable experience in winter navigation in challenging conditions, and it is essential that this is turned into an export commodity. The Finnish-born scientist and explorer A. E. Nordenskiöld was the first to sail along the Northern Sea Route to Asia (the Northeast Passage), which he did in 1877–78. The Arctic region can offer Finland and Finnish businesses major opportunities for success today and in the future. Safety and environmental issues in Arctic navigation are a core element of Finland's expertise.

Prime Minister Katainen's Government approved Finland's Strategy for the Arctic Region in August 2013. Under the vision set out in the strategy, Finland will be an active Arctic participant able to reconcile the limitations imposed and the business opportunities provided by the Arctic environment, and to do this in a sustainable manner while drawing upon international cooperation. The prospects for achieving this vision are good, as Fin-

⁶⁴ The present state and development needs of maritime training and education, p. 114. (In Finnish)

⁶⁵ Anticipating qualitative training needs in the maritime transport sector. Kirsi Uola. Finnish National Board of Education, Satakunta University of Applied Sciences. Reports, Series B, 3/2012. (In Finnish)

⁶⁶ Military service in Finland. Ministry of Defence 2010, p. 14, see also p. 88. (In Finnish)

land has a long tradition of winter navigation, robust expertise on cold climates and possesses Arctic marine technology. Finland is very much interested in being a part of the activities occurring in Arctic regions.⁶⁷ Finland is also able to provide new kinds of services that will enable safe movement and protection of the marine environment in Arctic shipping routes, including weather and ice services and oil spill prevention and response in ice conditions.⁶⁸

Finland should play a greater role in the production and export of expertise, construction, research, product development, technology and services relevant to Arctic regions. The Arctic expertise priorities for the Finnish maritime industry include energy-based and environmental technology solutions, development of port systems and ice navigation, and training in Arctic issues.⁶⁹ Expertise in cold-weather marine technology and navigation must be seen as a key part of Finland's future exports. Exports of Arctic expertise should be targeted locally at Norway and Russia in particular and further afield at Canada, the United States and China. Cooperation with countries interested in Arctic operations should be increased at all levels, involving both the private and the public sector.

In developing expertise, special attention must be given to business skills, marketing skills and international approaches when it comes to maintaining vitality and competitiveness in the maritime cluster. Specialised Arctic research is performed in different parts of Finland, but there is no single university which specialises in Arctic business know-how, despite the growing needs.⁷⁰ Finnish companies must engage in wide collaboration and must network extensively in order to benefit from Arctic business opportunities. The market must be offered a diversity of product and service packages that can cover expertise in various sectors.

Regarding future training needs, attention must be given to the mandatory Polar Code for increasing maritime safety and protection for the marine environment in Arctic areas, which is currently under preparation at the IMO and intended for completion in 2014. The purpose of the Code is to reduce the risks from ships operating in polar waters. The Code will include training requirements for personnel of vessels operating in Polar Regions. In general, the training in winter navigation must include adequate practical training as well as simulator practice and the elements required under the Polar Code.

Finland must function as a global expert at the leading edge in winter and ice conditions. A cluster of winter navigation know-how and Arctic expertise should be established in Finland to further develop the country's winter and ice expertise and promote exports, and this could also function as a virtual network of know-how and expertise. The operation of the cluster could focus on the exchange of information on winter know-how, marketing of opportunities to export expertise and expansion of activities.

⁶⁷ Finland's Strategy for the Arctic Region 2013. Government resolution on 23 August 2013.

⁶⁸ Finland's Strategy for the Arctic Region 2013. Government resolution on 23 August 2013 pp. 8–9.

⁶⁹ Turku Seas 2020 – Regional programme on competitiveness of the maritime and metal industries, 2013. (In Finnish)

⁷⁰ Turku Seas 2020 – Regional programme on competitiveness of the maritime and metal industries, 2013. (In Finnish)

Action

Finland - leading expert on sea and ice

- Enhancing expertise in education and training
 - 10. Support will be given for national networking of secondary-level educational institutions and polytechnics.
 - 11. The need and scope for shared use of resources and major investments (e.g. training vessel and top-grade simulator for demanding conditions) will be investigated.
 - 12. On-board training will be improved to ensure effective implementation of international requirements.
 - 13. A forecast will be made of the sector's quantitative education and training needs in order to assess the funding requirements.
 - 14. The qualifications and the qualifications system for the sector will be developed to make them more closely oriented to employment needs.
 - 15. Opportunities for further training on maritime transport in higher education institutions will be developed.
 - 16. Support will be given for implementation of the measures concerning education, training, research and expertise in the maritime cluster as proposed by the Maritime cluster working group set up to examine the competitiveness of the maritime industry in 2020.
 - 17. A strong brand will be created for maritime transport occupations and for related training ("Strong future for maritime transport").
- Arctic expertise and oil spill prevention, and using and exporting ice expertise – "Finland as a global centre of winter navigation know-how and Arctic expertise"
 - 18. The measures proposed in Finland's Strategy for the Arctic Region concerning education, training, research, business and international cooperation will be implemented in order to strengthen the operating pre-conditions for Finland's Arctic maritime industry and shipping company operations.
 - 19. Use of simulators will be developed for practising operations in ice conditions and other demanding situations.

6. Baltic Sea – a sea of opportunities

The aim is that the Baltic Sea is safe and healthy, which will attract recreational activities and tourism to the region and high-quality sea transport services for use within the market area.

The Baltic Sea is a shallow basin of brackish water connected to the North Sea via the narrow and shallow Danish Straits. The low salinity and slow turnover rate of the water mass, the low species diversity and the uncomplicated food web make the Baltic Sea sensitive to changes caused by eutrophication and hazardous substances. The Baltic Sea is of key significance as a commercial transport route and as a valuable natural environment. Up to about 15 per cent of the world's freight volumes are carried in the Baltic Sea annually and at any given moment there are about 2,000 vessels sailing in the Baltic.

Besides exports and imports of goods, the Baltic Sea also carries passenger traffic. In 2013, international passenger traffic on the Baltic amounted to 18.2 million passengers, the majority of whom travelled either between Finland and Sweden (approx. 9 million passengers) or between Finland and Estonia (7.9 million passengers). The highest growth is in the traffic between Finland and Russia, where passenger numbers have increased by about 40 per cent since 2011. Passenger volumes are nevertheless still fairly low compared with the traffic to and from Sweden and Estonia.

The Baltic Sea is also generating a growing interest among international cruise ship operators. In 2012, a total of 7.6 million foreign visitors arrived in Finland by all modes of transport, bringing in an estimated total of EUR 2.3 billion to the country during the year.⁷¹ Efforts must be made to turn the Baltic Sea region into an increasingly attractive option for tourism. This requires that we are able to ensure safety in the Baltic Sea and offer a clean environment for recreational uses.

The Baltic Sea region is a major market, and the opportunities in neighbouring areas should be examined closely, for instance in regard to export opportunities for the products, services and expertise of the maritime cluster. As the economies of the Baltic Sea region grow, the demand for transport services will also increase. In regulating sea transportation due account should be taken of the operation of Baltic Sea markets, not to turn the Baltic region into a special zone in which industry would find it difficult to obtain cost-effective transport services.

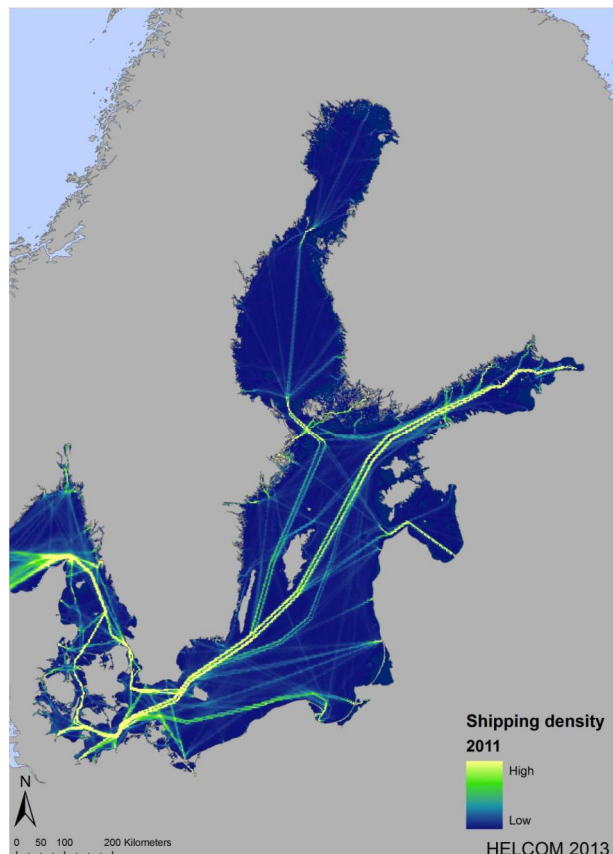


Figure 12. Baltic Sea traffic, 2011.

⁷¹ Finnish Tourist Board / Statistics Finland. Border interview survey, part 26. Foreign visitors in Finland in 2012. Finnish Tourist Board A:173 2013.

Baltic Sea

- ✓ The Baltic Sea is a small, almost closed basin, but in volumetric terms it is the world's second largest brackish water basin.
- ✓ Its surface area is approximately 392,000 square kilometres.
- ✓ The average depth is 55 metres, whereas the Mediterranean's is 1,500 metres.
- ✓ The Baltic Sea's catchment area is home to about 90 million people.
- ✓ The Baltic is one of the world's busiest seas, accounting for about 15% of the world's cargo traffic.
- ✓ The ice conditions in the Baltic Sea vary considerably. Ice covers an average area of 218,000 square kilometres, but in severe winters the Baltic Sea can freeze over almost completely. The ice cover is normally at its most extensive in late February/early March.
- ✓ Navigation in the Baltic Sea is challenging due to the volume of traffic, the web of intersecting routes, shallow waters, many islands and winter conditions.
- ✓ Cruise ship visits in the Baltic Sea have increased by 12 per cent in the past ten years, while cruise ship traffic globally has been increasing at 8 per cent annually.⁷²

Maritime traffic is forecast to grow, especially in the Gulf of Finland, where there has been an increase in oil shipments in particular. Between 1995 and 2012 the volume of oil cargoes in the Gulf of Finland increased eightfold to more than 160 million tonnes annually. This figure is expected to grow to as much as 200 million tonnes by 2015, partly as a result of the development of new Russian oil terminals. There are more than 20 oil tankers a day sailing in the Gulf of Finland.⁷³ The growing volume of traffic also increases the risk of accidents.

6.1 Healthy Baltic Sea

On 13 December 2013, the Ministry of Transport and Communications published its Environmental Strategy for Transport, which also describes the challenges and opportunities regarding the Baltic Sea.⁷⁴ The eutrophication caused by nitrogen and phosphorus is currently seen as the biggest problem for the Baltic Sea. The eutrophication reduces visibility, leads to changes in the interactions between species and causes benthic oxygen depletion. The sulphur and particle emissions from ships have a particular impact on the air quality of densely populated coastal areas. The Baltic Sea's catchment area is home to about 90 million people, of whom an estimated 31 per cent live within 50 kilometres of the coastline. The spread of non-indigenous species in the Baltic Sea via ship ballast water could lead to a significant adverse ecological and economic impact. In an oil spill accident, the oil would have a devastating effect on marine life and would pollute the coastal areas. Climate change is a major global challenge that, in the long term, could also have a decisive impact on conditions in the Baltic Sea.

Under the Marine Strategy Framework Directive, the aim is to achieve a good environmental status for the EU's seas by 2020. Member States are required to draw up marine management plans, i.e. national marine strategies, for their own sea areas. The marine management plan will cover the area from the shoreline to the outer limit of the exclusive economic zone (EEZ). In marine management planning, the Baltic Sea is an entity in its own right, just like the other EU regional seas. The marine strategy will include an assessment of the state of the marine environment, the targets for this and the indicators, and monitoring of the status. Member States must also draw up an action plan by 2015 for improving the state of the sea area. A shared sea such as the Baltic nevertheless also requires collaboration from Member States in the Baltic region in order that the national marine strategies and actions can be coordinated and consistent and follow a uniform approach wherever possible.

⁷² Source: Cruise Baltic (23 Jly 2013):

[http://www.cruisebaltic.com/media\(3586,1033\)/CB_Fact_Sheet__August_2012.pdf](http://www.cruisebaltic.com/media(3586,1033)/CB_Fact_Sheet__August_2012.pdf)

⁷³ Baltic Sea Portal 2013.

http://www.itameriportaali.fi/fi/tietoa/uhat/oljyonnettomuudet/fi_FI/oljyonnettomuudet/

⁷⁴ Environmental Strategy for Transport 2013–2020, publications of the Ministry of Transport and Communications 43/2013.

Due to the international nature of maritime transport, environmental regulations on shipping are decided primarily by the IMO, and this ensures that the application of regulations is harmonised and that all ships are treated equally. In its decision-making the IMO strives for consensus, but if matters are voted on, a qualified majority is required for amending existing instruments or adopting new ones.

In recent years, the EU has also incorporated IMO regulations increasingly into EU legislation. When new regulations are being prepared at the IMO the EU will coordinate the actions of its Member States and take decisions by qualified majority on the EU stance regarding matters within the Union's competence. In matters within EU competence Finland acts in accordance with the EU decision-making procedures and as part of the Union.

The Baltic Sea littoral States have all signed the Baltic Marine Environment Protection Convention, updated in 1992.⁷⁵ The Helsinki Commission (HELCOM), is the body that administers the implementation of the Convention. All the Baltic littoral States within the scope of the Convention and the European Union have approved the recommendations by which the Baltic Sea is being protected. The aim is that the recommendations will be implemented in each of the signatory States. Decision-making at HELCOM requires unanimity of the signatories. Under the Convention, HELCOM must also seek to ensure an effective and harmonized implementation of IMO rules in the Baltic Sea area.

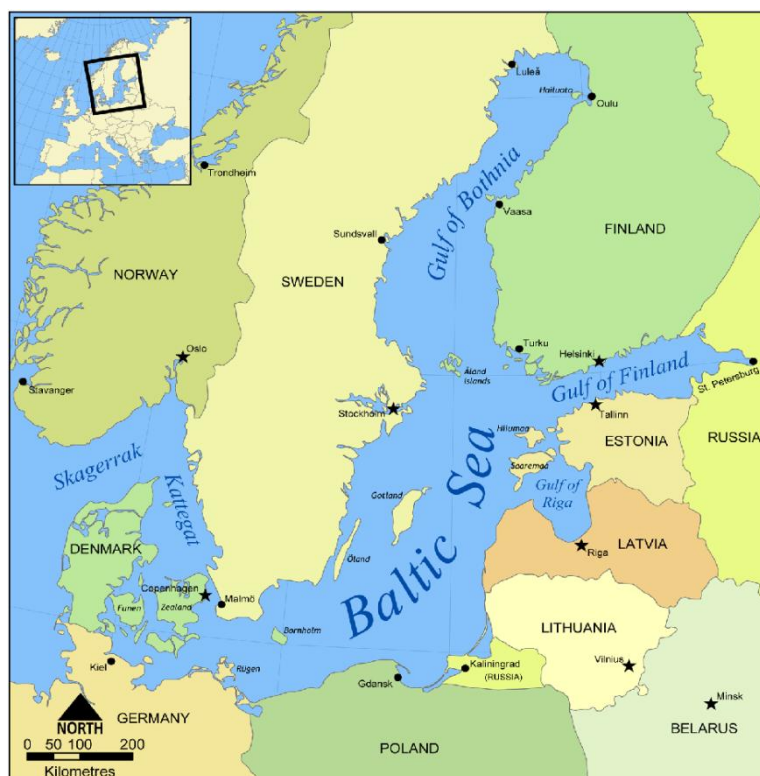


Figure 13. Baltic Sea.

International environmental regulations on shipping implemented principally via the Annexes to the IMO's MARPOL Convention and their updates are used to limit ships' emissions to air and water. For example, the emission limits for sulphur oxide emissions and particles seek to reduce the detrimental health effects of ships' emissions, especially for populations in coastal districts. By reducing nitrogen oxide emissions from ships, the aim is to improve air quality and reduce marine eutrophication. Energy efficiency regulations seek to reduce fuel consumption in new vessels in particular, so that CO₂ emissions from shipping can be reduced.

At the IMO the principal and most broad-based ongoing environmental regulatory issue is specifically the reduction of CO₂ emissions. The IMO already approved provisions on the energy efficiency of new ships in 2011. Now the IMO aims to approve an instrument that would require existing ships to report their fuel consumption and possibly also other information concerning transport performance. The aim is, at the same time, to prepare

⁷⁵ The original convention was signed in 1974.

rules concerning energy efficiency for existing ships. In the longer term the intention is to examine the pricing per tonne of CO₂ for shipping. A wide-ranging discussion of ships' CO₂ emissions has started at the IMO and will progress in phases. It is expected that pricing per tonne of CO₂ will become topical no earlier than 2020.

The entry into force of the regulation on global 0.5% sulphur content under Annex VI to the MARPOL Convention, regulating the prevention of air pollution from ships, is also a key issue for Finland. In 2018 the IMO must decide whether the preconditions exist for the provisions to enter into force in 2020 or whether this should be postponed until 2025. For Finland, it is very important that the global regulation should take effect in 2020, as it will mean fairer treatment for all ships and all maritime traffic. Regarding the assessment to be made by the IMO in 2018, it must be noted that sulphur scrubbers can also be of significance in relation to the question of low-sulphur fuel availability.

Negotiations on the Polar Code, which is important to Finland, are at the final stages in the IMO. The Code, which will regulate shipping in both Polar Regions in the future, is scheduled for completion in 2014. It is likely that the Code will then come into effect in 2016.

The EU has incorporated the provisions concerning sulphur oxide emissions that were approved by the IMO in 2008 into the EU Sulphur Directive updated in 2012. The Directive also contains a regulation to the effect that the 0.5% sulphur content requirement will come into effect in 2020 within the EU, in areas outside the sulphur emission control areas (SECAs). It is important for Finland that equal operating conditions in the whole EU are secured.

Currently under discussion in the EU is a Commission proposal for a Regulation on the monitoring, reporting and verification of ships' fuel consumption and possibly other performance data (the MRV Regulation). The aim is that the Regulation would come into effect in 2018. The aim is also that the EU's action would support the work being carried out at the IMO in this area.

HELCOM's Baltic Sea Action Plan (BSAP) was approved in 2007 and includes a section on maritime transport. The aim of the BSAP is to achieve a good status for the Baltic Sea by 2021. HELCOM has in cooperation with OSPAR⁷⁶, the organisation of North Sea and North Atlantic countries formed to protect the marine environment of the North-East Atlantic, prepared guidelines on how exemptions from the IMO's Ballast Water Management Convention requirement to use ballast water treatment equipment can be granted to ships on the basis of risk analysis. HELCOM has also spent about five years preparing an application to the IMO for the Baltic Sea to be designated as a nitrogen oxide emission control area, NECA. HELCOM has approved the content of the application and considers that it meets the IMO's criteria. HELCOM will return to the issue of when the application is to be submitted after the IMO has decided whether the NECA nitrogen oxide emission standards will be effective from the start of 2016 or from the start of 2021. The decision will be made by the IMO in spring 2014.

The table below consists of the main environmental requirements on ships agreed by the IMO or in preparation at either the IMO, in the EU or HELCOM.

⁷⁶ The OSPAR Convention for the protection of the marine environment of the North-East Atlantic.

Environmental requirements on maritime transport		
Matters decided	Year of decision	Entry into force
Ballast Water Management Convention <ul style="list-style-type: none"> - mandatory ballast water treatment in phases for all vessels world-wide - transition period 	IMO 2004	entry into force possibly 2016–2018
MARPOL Convention Annex VI on prevention of air pollution from ships, and the EU's Sulphur Directive tightening of sulphur emission limits* <ul style="list-style-type: none"> - SECA areas 0.1% (Baltic Sea, North Sea, English Channel, Sea areas around the North American continent (USA and Canada) other EU areas 0.5% - global level 0.5% 	IMO 2008 and EU 2012 EU 2012 IMO 2008/2018	1 Jan 2015 1 Jan 2020 2020 or 2025; decision in 2018
MARPOL Convention Annex VI on prevention of air pollution from ships energy efficiency design index (EEDI) requirements for new ships <ul style="list-style-type: none"> - the EEDI achieved must not exceed the required EEDI reference value - Level 0 (basic level defined as average EEDI for ships built between 1 Jan 1999 and 1 Jan 2009) - Level 1 (approx. 10% tighter than Level 0) - Level 2 (approx. 20% tighter than Level 0) - Level 3 (approx. 30% tighter than Level 0) 	IMO 2011	2013 – 2025 1 Jan 2013 1 Jan 2015 1 Jan 2020 1 Jan 2025
MARPOL Convention Annex VI on prevention of air pollution from ships <ul style="list-style-type: none"> - mandatory ship energy efficiency management plan (SEEMP) 	IMO 2011	1 Jan 2013
MARPOL Convention Annex IV on prevention of pollution by sewage from ships prohibition on discharge of untreated sewage from passenger ships <ul style="list-style-type: none"> - new ships built after 2016 - existing ships entry into force requires sufficient reception capacity in Baltic Sea ports*. In practice, the rules will apply to cruise ships. Finnish flagged ships in regular traffic already empty their waste at ports.	IMO 2011	2016 2018
MARPOL Convention Annex V on prevention of pollution by garbage from ships <ul style="list-style-type: none"> - limits on discharge of wash water and cargo residues from cargo holds of dry cargo ships 	IMO 2011	1 Jan 2013
Matters being discussed		
Stricter environmental regulations in Polar regions; part of the Polar Code	under discussion at IMO	1 July 2016 (preliminary)
Restrictions on greenhouse gas emissions IMO <ul style="list-style-type: none"> - fuel consumption monitoring and energy efficiency - market based measures (e.g. fuel charge or emissions trading) EU	under discussion at IMO	poss. 2017 poss. 2020

- proposal for an MRV Regulation on monitoring and reporting of ships' CO ₂ emissions	under discussion in EU	applied poss.start of 2018
MARPOL Convention Annex VI on prevention of air pollution from ships - stricter limits on nitrogen oxide emissions for new ships in NECA areas - application to IMO for designating the Baltic Sea as a NECA area	IMO 2008 Decision at IMO spring 2014 under discussion at HELCOM	2016 or 2021 depends on IMO decision
Limits on emissions of fine particulate matter, initially for black carbon in Arctic region	under discussion at IMO	No timetable

*in EU's exclusive or shared competence

Table 7. Environmental requirements concerning maritime transport.

According to a study⁷⁷ commissioned by the Finnish Transport Safety Agency, the price of transporting by sea is expected to rise significantly with the approved new environmental requirements. The study found that the total cost increase as a result of the new environmental regulations will be EUR 460–490 million in the years 2015–2031, assuming that marine gas oil (MGO) is used as the fuel. The calculations are based on present-day vessels and cover traffic calling at Finnish ports. If the fuel used is high-sulphur heavy fuel oil (HFO) combined with the use of a sulphur scrubber, the additional costs, including both investment and operating costs, in existing vessels are estimated to be approximately EUR 120–140 million annually in the period 2014–2023, after which the additional costs would be an average of EUR 15 million annually, consisting only of extra operating costs.

Being located far from Central Europe's main markets, these additional costs of reducing emissions from shipping are considerable for Finland and its export industry. The challenge is thus to find a balanced solution, which enables the introduction of new rules to efficiently reduce adverse environmental effects of shipping and at the same time takes into account the economic impact of the new rules on businesses and society. Therefore, in respect of maritime transport environmental regulations that are under preparation, it is important that their impacts are comprehensively assessed and forecasts made of the necessary measures and the costs impacts. The regulations should also seek to ensure that new provisions are applied equally in all sea areas and to all ships in order that the regulations do not distort the competitive framework for the industry. The preparatory work must also examine the effects of possible new regulations in a more holistic way.

Environmental regulations can secure a good status for the Baltic Sea and other sea areas, but the regulations must be made at the global level by the IMO. It is also important for Finland that the challenges of winter navigation and the special issues arising from navigating in ice are highlighted also within the framework of the IMO regulations.

When decisions are made about the entry into force of new provisions, it is necessary to ensure that the parties affected by the new regulations are informed of them at a sufficiently early stage. Timely information is essential for being able to look ahead effectively, for instance when making investment decisions. Sufficient adjustment time must also be reserved for the implementation of the regulations, so that, for instance, long-term investment can meet the coming requirements. Once regulations are approved, maritime transport actors and the Administrations must together ensure that the regulations are implemented and the compliance of the regulations monitored. To make sure that ship-

⁷⁷ Evaluating the costs resulting from the new maritime environmental regulations. Finnish Transport Safety Agency publications 24/2013. (In Finnish)

ping is energy efficient and environmentally friendly, the entire transport chain should cooperate more closely and look for the best practices.

In the efforts to reduce greenhouse gas emissions from shipping and the regulations to improve energy efficiency, Finland needs to focus internationally and within the EU particularly on the parameters imposed by the country's geographical location and the additional costs of winter navigation and on securing sea transport links all year round. Shipping to and from Finland must not be punished for the higher fuel consumption of ice-strengthened ships required for year-round traffic. Closer cooperation at national level between shipping companies and ports in searching for solutions and renewal of the fleet to ensure it is more environmentally friendly and energy efficient, to meet or surpass the requirements of the new environmental regulations are also needed.

The Commission has prepared a Progress report concerning the reduction of harmful emissions from shipping and the equipment needed for sustainable waterborne transport. It has assembled a "toolbox" for identifying measures to reduce the costs of compliance with the sulphur emission requirements. Use of new technology for meeting the sulphur requirements means considerable investment from the private sector, which the public sector should seek to facilitate in the best possible way. The Commission has set up the European Sustainable Shipping Forum (ESSF) with the task of finding solutions for issues relating to implementation of the environmental requirements and enhance the dialogue between all stakeholders. Finland will actively participate in the forum, coordinate its national influence on the forum's work and efficiently distribute information about feasible solutions.

6.2 Ensuring safety in the Baltic Sea

Finland is visited by about 100 vessels a day, all year round. The combined cargo volume of these vessels is equivalent to 7,000 railway wagons or 11,200 articulated heavy goods vehicles per day. About half of the merchant ships call at ports on the Gulf of Bothnia and about half at ports on the Gulf of Finland. The Gulf of Finland alone is visited or crossed by about 40,000 vessels each year, of which about 6,500 are oil tankers. Baltic Sea shipping is growing at a distinctly faster rate than elsewhere in Europe, which adds significantly to the risk of serious accidents. It is therefore of paramount importance for Finland that safety is ensured in the Baltic.

According to information from Lloyd's List Intelligence, the number of accidents at sea that are classified as serious has increased in Finland and the northern Baltic Sea in the period 2002–2012. In 2012, the vessel types experiencing the greatest number of accidents among Finnish-registered vessels in Finnish territorial waters were cargo ships and passenger ships. By type of accident, the most common accidents were grounding, vessel collisions and collisions against quays and floating structures. In 2012, 40% of all accidents were due to human error, 26% were for technical reasons and 11% were due to difficult weather or ice conditions. The main factors leading to accidents are fatigue and exhaustion, machinery damage and shortcomings in shipping company safety culture. An examination of the trends in different accident types in the period 2002–2012 reveals that the number of cases of machinery damage in particular has increased in recent years. The reason for this is probably the growth in traffic volumes. Lack of competence, neglected maintenance for financial reasons, and inadequate guidance are also possible contributory factors.⁷⁸

The fundamental aim of maritime safety is to prevent accidents from occurring. Accidents at sea always involve a risk of personal injury and environmental damage. Improving

⁷⁸ Finnish annual maritime safety review 2013 pp. 11–16.

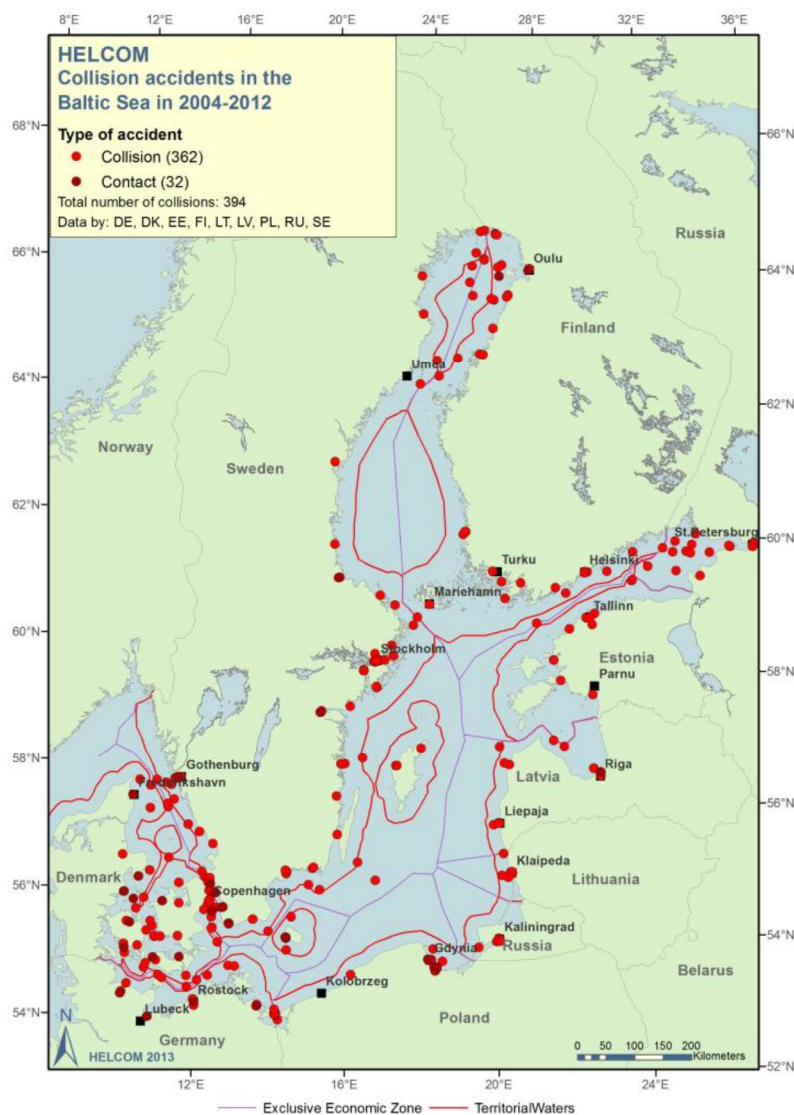


Figure 14. Collision accidents in the Baltic Sea, 2004–2012.

maritime safety means adopting preventive measures to avoid accidents and also assessing and managing the risks effectively. It is also important to have contingency plans for accidents and to be able to systematically and efficiently deal with such situations if they arise. In 2009, the Ministry of Transport and Communications drew up a Baltic Sea Maritime Safety Programme⁷⁹, which is a wide-ranging action plan for improving the safety of maritime transport in Finnish territorial waters and throughout the Baltic Sea. The basic aim of the programme is to more effectively prevent accidents and the consequential loss of human life and pollution of the marine environment. Most of the measures outlined are already in place. The policies should nevertheless continue to be taken forward. A joint communication of the Commission and the European External Action Service containing elements for an EU maritime security

strategy was presented in March 2014.

The improvement and regulation of global maritime safety is based almost entirely on international arrangements. States are able to improve maritime safety at national level, but for the most part they are dependent on international developments. The main provisions on maritime safety are prepared and approved by the IMO. In individual matters of importance to Finland, cooperation is sought with other countries. The EU already has a considerable amount of legislation on vessel safety, vessel traffic surveillance and maritime security, and a central role is played by the EU's European Maritime Safety Agency (EMSA). For matters discussed by the IMO that are within the EU's competence, the EU position is determined within the EU coordination framework.

Multilateral and bilateral cooperation among the Baltic Sea littoral States concerning maritime transport safety should be increased. There is already a considerable amount of

⁷⁹ Baltic Sea Maritime Safety Programme. Publications of the Ministry of Transport and Communications 13/2009.

cooperation in different forums within the Baltic Sea region. Practical cooperation on Baltic Sea issues is already extensive between the EU, its northern Member States and Russia, for instance via the direct cooperation arrangements in relation to the Northern Dimension policies, the Council of the Baltic Sea States (CBSS), HELCOM and the competent authorities of countries in the region.

Maritime safety can be enhanced through a wide variety of measures. For accident prevention it is important that accidents are investigated and the causes of dangerous situations analysed, and that the results are brought together for formulating safety improvements. The Finnish Transport Safety Agency aims to establish a system that requires the Agency to be given all information on accidents and near misses that occur in shipping operations for use by the authorities in improving safety. This will help create a foundation for comprehensive risk analysis of Finland's maritime safety status. The necessary legislation, procedures and systems for this will need to be established. The intention is that dangerous situations in vessel operation will be reported to the Agency directly from the operators' safety management systems via a confidential reporting system.

Publications on maritime safety feature wide-ranging discussion of the importance of a good safety culture as a way of preventing accidents. Key to a safety culture is the positive attitude of personnel towards regulations and guidelines that promote safety. Further key factors are the commitment of management and the view that in conflicting situations safety should always come before financial interests. Safety culture is also supported by a spirit of trust in which the disclosure of an error is not something to be feared but something to learn from. To promote a good safety culture, the Finnish Transport Safety Agency has launched a project aimed at obtaining better information on errors and safety deviations, and at the same time encouraging a new approach from maritime transport stakeholders. In promoting safety, attention must be given to the safety of the whole operating chain, including the safety and security of cargoes.

Hydrographic surveys have a direct impact on the safety and smooth operation of maritime transport. The Baltic Sea is shallow, rocky and difficult to navigate, which means that accurate and up-to-date hydrographic survey data is essential for ensuring safe navigation. A nautical chart will give the fairway user and others travelling in marine areas the information they need on depths, fairways and traffic arrangements for safe navigation. Nautical charts are used for route planning, progress monitoring and real-time navigation.

Navigation is in the process of switching over to the use of digital map data and systems. The IMO has declared that the use of type-approved electronic chart display and information systems (ECDIS) and the official electronic navigational charts (ENC) incorporated within them and standardised by the International Hydrographic Organisation (IHO) is mandatory for tankers. This requirement will be broadened in stages up to 2018 to cover almost all merchant ships. The use of ECDIS systems will improve navigational safety, as a nautical chart showing the vessel's true location will be displayed continuously and so the system can issue warnings if the vessel is approaching shallows or other danger points.

Surveillance of sea areas has traditionally been the concern of States at national level and conducted as an internal function within a particular administrative branch of government. The threats are nevertheless of a kind that transcend administrative and geographical boundaries. As part of the EU's integrated maritime policy, efforts are being made to enhance the efficiency of maritime surveillance, especially by improving the collaboration between different participants at both national and international level. Any centralising of functions would improve their efficiency and give rise to productivity and cost-effectiveness benefits in the longer term through integration.

National control and management of maritime functions should be examined openly and their efficiency improved, and consideration should be given to centralisation of these functions. Maritime functions cover border security and law enforcement, maritime transport safety, safety of people at sea, and safety of the marine environment. In most countries these functions are divided among a number of authorities that are operationally independent of each other. This often leads to scarce resources being used in a way that is not the most cost-effective.

Maritime safety can be enhanced by improving the vessel traffic monitoring. Oil spill accidents are one of the safety risks present in the Baltic Sea, and existing and new solutions are needed for the prevention of such accidents and for improving other safety aspects. One possibility is to reduce safety risks by developing automatic risk identification and forecasting tools for vessel traffic management systems. The information produced by vessel traffic services (VTS) should be made more widely available, and an assessment should be made of whether this information can be useful in developing new services for the maritime sector as a whole.

The existing maritime surveillance and monitoring systems, maritime rescue management system and the operation of vessels and aircraft should be fully exploited at operational level. To increase safety it is necessary to ensure the cost-effective use of surveillance and implementation capabilities. Networking of the functions of maritime authorities should be developed further and operational management tasks concerning maritime surveillance and maritime capabilities should be clarified as necessary. Consideration should also be given to whether it is appropriate to establish in Finland a joint rescue coordination centre (JRCC) under recommendations from the IMO and the International Civil Aviation Organisation (ICAO) to make more effective use of aircraft in managing accidents at sea.

The purpose of maritime traffic monitoring is to enhance the safety of shipping, improve efficiency and prevent adverse environmental effects from shipping. The Finnish Transport Agency maintains a VTS system, the Gulf of Finland mandatory ship reporting system (GOFREP), and the national maritime transport information management system (Portnet), which is part of the EU's maritime data management system SafeSeaNet. The VTS authority is also responsible for surveillance of compliance with the routing systems in international waters adjacent to the VTS area. A significant addition to the VTS authority's duties was made in 2012, when the power to decide on directing ships in need of assistance to a safe refuge was incorporated into the Vessel Traffic Service Act in connection with the implementation a change to the monitoring Directive.

Vessel Traffic Services can prevent accidents very effectively. VTS intervene in vessel behaviour about 5,000 times each year. About 10% of the cases on which reports are filed are potential groundings that have been prevented.⁸⁰ Vessel Traffic Services is recognised internationally as being an important part of the transport logistics chain, and it is constantly being developed with this in mind. It also promotes safe and efficient shipping and has a significant role in preventing environmental damage. In autumn 2012, the Vessel Traffic Services prevented a tanker grounding in the Gulf of Finland through the use of the GOFREP system in co-operation with Russian colleagues. The accident could have led to costs of hundreds of millions of euros in oil spill cleanup and restoration costs. Compensation for such costs would also come from the vessel's insurer and from the International Oil Pollution Compensation Funds (IOPC).

⁸⁰ Vessel traffic management systems intervened in vessel behaviour about 5,000 times in 2011. In 2012 the number was about 4,600, or slightly down on the previous year, whereas in 2013 the total rose to about 6,700.

Using SafeSeaNet, Member States exchange information on the port visits, locations and dangerous cargoes of vessels travelling in the EU area, and on any accidents or dangerous situations encountered by vessels. SafeSeaNet is also used to exchange information obtained via national networks of land-based stations forming part of ships' automatic identification systems (AIS) and via the systems of VTS centres. The IBnet system connected with winter navigation control and the next generation IBnext system are being developed within the EU-funded WINMOS joint project on winter navigation in collaboration with the Swedish authorities.

The implementation of the ships' reporting formalities Directive for port visits and the development work on SafeSeaNet to support this will continue until June 2015. Member States must then operate a National Single Window for the electronic receipt of reports on ships' port visits required under international, EU and national legislation, and for the exchange of this between competent authorities within the EU area. Information exchange within the Single Window system covers information from maritime transport, environmental, customs, border and health authorities. The administrative formalities concerning port visits by ships are simplified and made easier by the electronic collection of this information. Within the framework of the EU's policy on a barrier-free European maritime transport area, the Commission issued a Communication on the Blue Belt package, the aim of which is to simplify customs formalities.

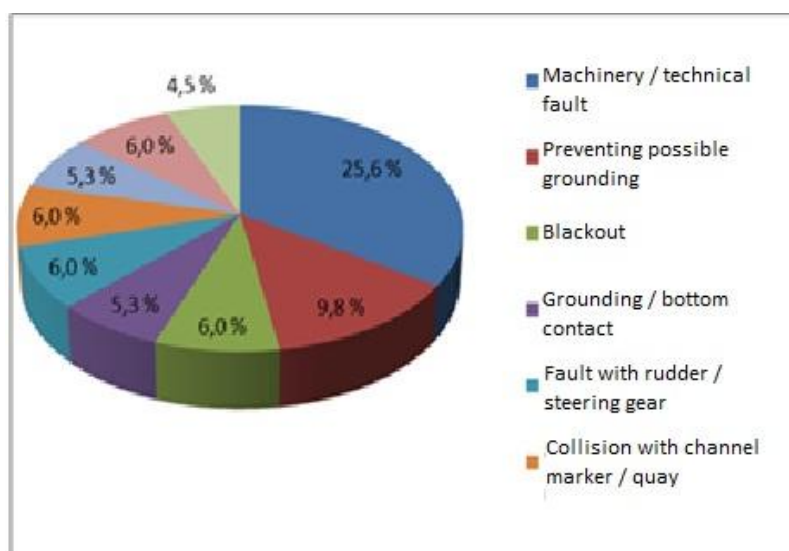


Figure 15. VTS incident reports, 2013.

The system used for surveillance in Vessel Traffic Services is being revised as part of the Finnish Transport Agency's project to renew its traffic control systems. Traffic situations are analysed automatically and any deviations and risk situations are indicated to the vessel traffic controller, who may then warn the vessel of an imminent danger.

6.3 Improving connections with Russia and promoting transit traffic via Finland

The growth outlook for Russian traffic is such that it is necessary to look for ever more efficient and environmentally friendly operating methods for cross-border traffic. Russia's WTO membership brings new opportunities to take advantage of waterborne transport in traffic movements between Finland and Russia. With the WTO accession, Russia's inland waterways are opening up to foreign traffic and this will allow the opportunity to switch goods traffic increasingly to vessels travelling directly to the interior.

However, effective use of the waterborne transport system will require further development of the operating environment. The adoption of electronic documentation and development of an intelligent transport network will facilitate and standardise the border

crossing procedures in Russia. Developing goods and passenger transport will require renewal of the ageing fleet of vessels. A potential abolition of visa requirements between the EU and Russia would probably boost tourism flows from Russia to Finland and thus increase the demand for various transport and accommodation services in Finland. A future bottleneck in the development of transit traffic will be a shortage of rail transport capacity between Finland and Russia, although improvements are planned, with double track between Luumäki and Imatra and improved arrangements at the Imatra border crossing. In spring 2012, Prime Minister Katainen's Government passed a resolution by which this project will begin in the next Government term. The promotion and facilitation of transit traffic must be developed further in the future.

6.4 Making the Baltic more attractive for cruises, boating and tourism

The acknowledged strengths of Finnish tourism include a unique location next to Russia, attractive travel destinations and tourism areas and a clean natural environment (e.g. Helsinki, the Turku Archipelago, Finnish Lakeland and Lapland, incl. Kuusamo), plus the diversity of services at tourism clusters. The weaknesses concern accessibility in general, unawareness and relatively high prices.⁸¹ The tourism industry has an important impact on employment and development in Finland's regions. The promotion of visits by foreign tourists to Finland is the most effective way of boosting income from tourism, in terms of the national economy and for individual regions. The growth in income from foreign tourism in Finland has been steady, and is expected to continue at an average annual rate of 4% to 5%.⁸²

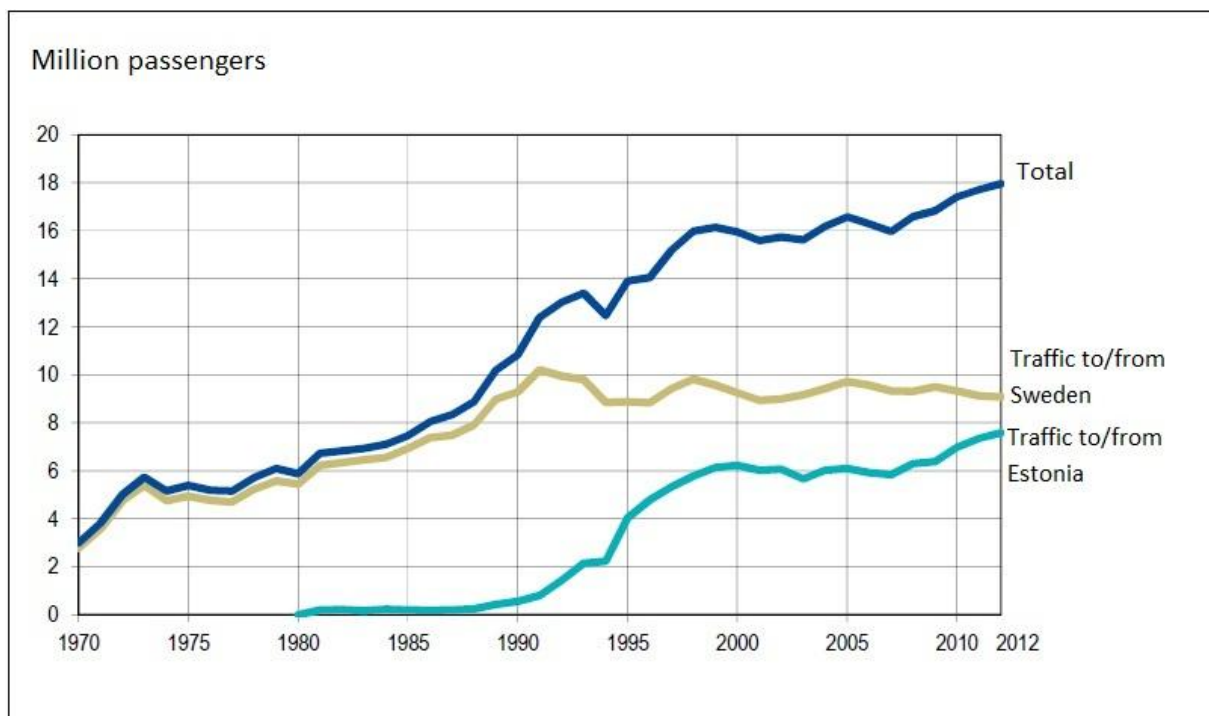


Figure 16. International passenger traffic by sea, 1970–2012.⁸³

In 2013, a total of 18.2 million passengers travelled by sea, which is 1.4% more than the previous year. The growth was due especially to the increase in traffic to and from Est-

⁸¹ Finland's tourism strategy to 2020. Four good reasons to promote tourist industry development. Ministry of Employment and the Economy 2013.

⁸² Finnish Tourist Board.

⁸³ Statistics on international shipping 2012. Statistics from the Finnish Transport Agency 7/2013.

nia and Russia.⁸⁴ Tourism in recent years has displayed an emphasis on growing environmental awareness. Finland's strength in tourism lies especially in its clean environment. It is significant that in terms of passenger numbers the Port of Helsinki (11.6 million passengers) is comparable to Helsinki Airport (15.3 million passengers⁸⁵) as an international traffic hub.

Tourist travel by waterborne transport to and from Russia is restricted by the visa procedures for journeys where customers travel using a combination of transport modes, e.g. by ship to Russia and return by train. A visa is required for such trips, whereas a return sea voyage does not require a visa. Closer cooperation between travel agents and Russian travel and tourism entities would open up new opportunities for offering waterborne tourism services in lakeland districts of both Finland and Russia.

In particular, financing models for investments in vessels for domestic traffic should be devised that would facilitate fleet renewal and enable service levels to be improved to match today's requirements. There should be a general increase in the service level so that service providers can form networks of high-quality services. Demand exists abroad for such services.

Action

Baltic Sea – a sea of opportunities

➤ Healthy Baltic Sea

20. Finland will act responsibly in seeking to improve the state of the Baltic Sea to a good level by 2020 within the EU and in accordance with international commitments.
21. Finland will play an active role in the International Maritime Organization (IMO). In the environmental regulation of maritime transport, Finland will primarily seek international regulation through the IMO. The main issues are:
 - a. Restricting CO₂ emissions from shipping
 - b. International entry into force in 2020 of the global 0.5% sulphur content limit
 - c. Ensuring that the additional burden caused for Finland by winter conditions in the Baltic Sea area is minimised in regulations on shipping.
22. Finland will be resolute and proactive in exerting its influence in environmental and safety matters concerning maritime transport in the EU and in HELCOM.
23. The risks of oil and chemical spill accidents in the Baltic Sea will be minimised and the preparedness and response capabilities improved.

➤ Finland building a Baltic Sea safety brand ("The Baltic Sea is the world's safest sea")

24. Finland's maritime rescue services will be enhanced.
25. The safety and smooth functioning of maritime transport will be secured and its environmental effects minimised through national and cross-border cooperation.

7. Exerting an influence at international and EU level: priorities and partners

Maritime transport is global and regulations are adopted at a global level in the IMO. This ensures extensive harmonisation of regulations and equal treatment of ships. The decisions made on common matters in international forums have a key impact on the development of Finland's maritime transport sector. The core of shipping regulations constitutes of the Conventions prepared by the IMO and the instruments adopted on the basis of these Conventions, such as IMO resolutions. Other key bodies are the European Union and the European Maritime Safety Agency (EMSA). Besides the IMO, other international maritime transport forums that are important for Finland include the Baltic Marine Environment Protection Commission (HELCOM) and the Arctic Council.

In view of Finland's special characteristics regarding maritime transport, especially winter navigation, it is essential that implementation of Finland's Strategy for the Arctic Region is effective and that cooperation between the States of the Arctic region is increased. Finland will be active in the preparation of the Polar Code at the IMO and within the Arctic Council.

During preparation of the Maritime Transport Strategy for Finland, discussion with the various parties in the sector included a focus on Finland's need to exert its influence at international and EU level and consideration of which themes are of paramount importance to Finland. To actively influence matters, it is important that all the sector's entities and opinion formers convey a joint message to the world about the matters that are important for Finland.

➤ Finland will be an active international actor

1. Finland will be proactive in the international arena. Finland will exert its influence proactively and more effectively at the IMO, in the EU, HELCOM and other international forums. Proactive influence should be based on jointly determined communications at all administrative levels, between sectors and involving all actors in the maritime field. The importance of well-timed influence will be emphasised.
2. Finland will take an active role, as set out in the Strategy for the Arctic Region. Finland will implement its Strategy for the Arctic Region.
3. To further develop shipping company operations and the maritime cluster, bilateral international cooperation and public and private partnerships will be strengthened, especially with Russia and the Nordic countries. The proximity of the Russian market and the active role of Norway in the Arctic region offer the potential to expand the sphere of operation of Finnish shipping companies and the rest of the maritime cluster in these directions in particular. Making more extensive use of the market will be encouraged both at the official level and through actions of individual companies. The priorities in exploiting the Baltic Sea market will be cleantech products and Arctic expertise, especially navigating through ice conditions.
4. Sufficient resources will be secured for influencing matters at international level. Conveying messages that are important to Finland will require sufficient national resourcing for this work. Further work should include determining the resourcing level and coordinating cooperation with the different participants in the sector. Finland should also consider appointing a permanent representative to the IMO in London.

- Finland's priorities in exerting influence at international and EU level in the maritime transport sector:
5. Finland must, in all situations, be able to meet the challenges of winter and winter navigation in Baltic Sea shipping. The reliability and smooth operation of winter navigation are extremely important for Finland's maritime transport. The geographical realities must be acknowledged. The additional challenges arising in exceptional circumstances must also be brought forward at international forums and for EU bodies in order to improve the understanding outside Finland of the demands associated with winter circumstances.
 6. In the formulation of EU legislation, Finland's accessibility must be secured (e.g. Trans-European Transport Network (TEN-T)). Finland's remote location in relation to the EU internal market and the relatively thin traffic flows mean additional logistics costs. This must be taken into account in EU legislation and in any solutions on financial support, and the burden on the maritime transport sector as a result of these factors must be alleviated.
 7. Safety and environmental regulations for maritime transport must be made primarily at global level in the IMO. To ensure equal treatment of regions and ships it is important that matters concerning safety and environmental regulations are decided at the global level by the IMO. The regulations should affect all regions equally. Preparation of regulations must include comprehensive and extensive assessments of the impacts of the regulations.